

**FRONT END/CONSTRUCTION-RELATED
RESPONSE ACTIONS, COMPREHENSIVE
RESPONSE ACTIONS, TEMPORARY
SOLUTIONS, POST-RAO RESPONSE ACTIONS
AND NUMERICAL RANKING SYSTEM**

PUBLIC HEARING DRAFT
PROPOSED AMENDMENTS TO 310 CMR 40.0000, THE MASSACHUSETTS CONTINGENCY PLAN

EFFECTIVE DATE OF THE PROPOSED REVISIONS

1. NOTE TO REVIEWERS: *Different options exist for establishing the effective date of the final regulations. The regulations can go into effect on the day they are published or they can go into effect on some date after the publication date. Specific provisions may be given different effective dates, where warranted.*

DEP usually delays the effective date of non-emergency regulatory changes until some time after (e.g., 30 days) the date on which the Secretary of State publishes the final regulations in the Massachusetts Register. Delaying the effective date allows the regulated community and other program stakeholders time to obtain and become familiar with the final changes before they go into effect.

DEP is considering whether it may be beneficial to delay the effective date of the changes to the Method 1 Cleanup Standards and the new provisions requiring the use of the Remedial System Monitoring Report for some additional period (e.g., 4 months) beyond the date on which the rest of the Wave 2 provisions take effect in light of the adjustments parties may need to make in their conduct of response actions to meet these requirements. To facilitate the transition to the new Method 1 Standards, the Department is also considering making the new Method 1 Standards available during this transition period prior to their effective date as published Method 2 standards pursuant to 310 CMR 40.0982(7). The effect would be that parties could use either the new or old standards during the transition period to support Response Action Outcomes before the new standards take effect as Method 1 Standards. The delay in implementing the Remedial System Monitoring Report would allow parties to become familiar with the reporting format and the process for submitting the report electronically, as the proposed change would require.

While delaying the effective date of the Method 1 Cleanup Standards and Remedial System Monitoring Report requirements would allow more transition time, it may be that the complexity added by staggered effective dates is not worth the benefit of additional time. The total length of the regulation amendment process may provide adequate time to review and make adjustments to response actions that are currently underway. The Department seeks comment on this issue.

PROPOSED REVISIONS TO SUBPART A: GENERAL PROVISIONS

REMEDIAL ADDITIVES

2. NOTE TO REVIEWERS: *DEP proposes to revise 310 CMR 40.0046(4)(b) to clarify that groundwater monitoring is required after the final application of Remedial Additives. The current language has been interpreted to mean that monitoring may cease after the final application of Remedial Additives, which is not the intent. The insertion of “where appropriate” in 40.0046(a) is intended to allow for the application of remedial additives without baseline analysis of soil or groundwater in situations where there isn’t sufficient time or necessity for obtaining baseline results given the response action logistics or objectives (e.g., to allow the application of additives during at the time of a tank removal, while the excavation is open).*

40.0046: Application of Remedial Additives

...

(4) Requirements for Treatment of Soil and Groundwater. Each person performing response actions at a disposal site pursuant to M.G.L. c. 21E and 310 CMR 40.0000 that include the application of Remedial Additives shall:

(a) prior to the application of Remedial Additives, where appropriate, collect and analyze soil and/or groundwater samples at the disposal site in accordance with 310 CMR 40.0017 to document the concentration of oils and hazardous

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materials, and Remedial Additives and/or Remedial Additive By-products, which may be present in soil and/or groundwater from previous application of Remedial Additives; and

(b) after the application of Remedial Additives, monitor the groundwater hydraulically upgradient and downgradient, and where practicable underlying the point of application of the Remedial Additives at ~~regular~~ intervals ~~not exceeding of~~ three months thereafter to detect any migration of oil and/or hazardous material, Remedial Additives and/or Remedial Additive By-products from the disposal site, ~~until the final application of Remedial Additives is made.~~

(5) Each person performing response actions at a disposal site pursuant to M.G.L. c. 21E and 310 CMR 40.0000 that includes the application of Remedial Additives, shall after the final application of Remedial Additives at a disposal site, monitor the groundwater at regular intervals for a reasonable period of time to demonstrate compliance with 310 CMR 40.0046(1)(b), unless the concentrations of Remedial Additives applied were below applicable standards set forth in 40.0046(1)(b). For determining a reasonable time period, each person shall consider the types, concentrations, and application methodology of Remedial Additives applied, the presence of Remedial Additive By-products, rate and direction of groundwater movement and flow, and the permeability of the soils at the disposal site.

SPECIAL PROJECT DESIGNATION

3. NOTE TO REVIEWERS: *The provisions at 310 CMR 40.0060 currently provide public entities (e.g., redevelopment authorities, local, state or federal authorities or agencies) with up to five years to Tier Classify disposal sites under a Special Project Designation. The purpose of the Designation is to provide applicants with greater flexibility in meeting MCP deadlines with the intent of promoting redevelopment and/or allowing the permittee to coordinate complex or multiple property response actions within the project area to achieve economies of scale from such coordination.*

To enhance the utility of the Special Project Designation as a redevelopment tool, the Department is proposing to expand the eligible applicants and scope of the provisions and to streamline the permit review process. The Department seeks comments on the concept, specific proposals and whether the changes would likely make the Designation a more useful tool for managing complex or multiple property response actions in a single project area.

The proposed changes include:

Expanded eligibility *The first change would include private parties among those eligible for Special Project Designation provided such private parties are “Eligible Persons” under Chapter 21E with respect to the release(s) at the properties that are the subject of the Special Project application and that they demonstrate that the project has both community support and a public benefit (e.g., economic development, infrastructure improvements, public housing, recreation or access). To ensure that communities are selective in their support of Special Project Designations applications by private parties, the Department is also proposing to set annual limits on the number of applications per community, based on population [see 310 CMR 40.0061(3)(d)].*

Expanded Scope *The second change would allow applicants to apply for an extension of deadlines for Comprehensive Response Actions (Phases II, IV or V).*

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Streamlined Permit Review Process In addition to expanding the eligibility and scope of the Special Project Designation, the Department is proposing to streamline the application process by using the presumptive permit approval in 310 CMR 40.0720 for the review and approval of Special Project Designation.

Effect of Special Project Designation The proposed effect of an approved Special Project Designation would be a two-year extension of the deadline(s) for which the Special Project Designation is sought. For Special Project Designations sought prior to Tier Classification, the permittee would have an additional two years beyond the current Tier Classification deadline to classify the disposal site(s) within the project area. For Designations sought to extend Comprehensive Response Action deadlines, the permittee would have two additional years to achieve the deadlines for Comprehensive Response Actions specified in 310 CMR 40.0550 and 40.0560 for the disposal sites(s) within the project area. Upon expiration of a Special Project Designation, a permittee would be able to seek additional Special Project Designation extensions.

Permit and Annual Compliance Fees

The proposed changes to the Special Project Designation provisions would mean that disposal sites bundled under a single Special Project Designation obtained at the time of Tier Classification would be subject to a single Tier IA, IB, IC and II annual compliance fee and single Tier I Permit fee, if applicable.

40.0006: Terminology, Definitions and Acronyms

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(12) For purposes of 310 CMR 40.0000, the following words and phrases shall have the following meanings unless the context clearly indicates otherwise:

...

Downgradient property means a parcel of land which is located downgradient of the parcel of land which is the source of a release which has come to be located thereon.

Eligible Person means an owner or operator of a site or a portion thereof from or at which there is or has been a release of oil or hazardous material who: (i) would be liable under M.G.L. chapter 21E solely pursuant to clause (1) of paragraph (a) of section 5; and (ii) did not cause or contribute to the release of oil or hazardous material from or at the site and did not own or operate the site at the time of the release.

Endangered species means those vertebrate and invertebrate animal species officially listed as endangered by the Massachusetts Division of Fisheries and Wildlife under 321 CMR 10.00.

...

40.0060: Special Project Designation

310 CMR 40.0061 through 40.0068, cited collectively as 310 CMR 40.0060, set forth the requirements and procedures for Special Project ~~e~~Designations.

40.0061: Purpose and Eligibility

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(1) The Department may designate certain projects as "Special Projects." Special Project ~~d~~Designation shall authorize the Department to:

- (a) extend the deadline for submitting a Tier Classification Submittal as required by 310 CMR 40.0500; ~~and 40.0600; and~~ or
- (b) extend deadline(s) for completing Comprehensive Response Actions (Phase II, III, IV or V) as required by 310 CMR 40.0550(2) or 310 CMR 40.0560(2); and
- (b) establish an alternative annual compliance assurance fee schedule for the Special Project as described in 310 CMR 4.00.

(2) ~~(2)~~ Eligible Applicants. The following entities may apply to the Department for Special Project Designation:

- (a) Any public body politic, including but not limited to any federal, state or municipal governmental entity, ~~may apply to the Department; or~~
- (b) Any person who:
 - 1. provides a letter of community support as described in 310 CMR 40.0061(3)(d) from the Chief Municipal Officer(s) of the community(ies) in which the Special Project Designation area is located; and
 - 2. is an Eligible Person as that term is defined in M.G.L. Chapter 21E with respect to any location within the boundaries of the project.

(3) Eligible Projects. Projects eligible for Special Project ~~d~~Designation may include but are not limited to infrastructure improvement projects (e.g., construction or expansion of rail lines or roadways), redevelopment of one or more properties, or the performance of coordinated response actions addressing multiple disposal sites. Eligible projects shall meet each of the following criteria:

- (a) one or more disposal sites are, or are likely to be, located within the boundaries of the project;
- (b) proposed response actions will be managed in a coordinated fashion;
- (c) the applicant has ~~demonstrated its support of the project by~~ committing and/or securing adequate public financing for the project (e.g., by providing direct financing, tax increment financing or special tax assessments pursuant to G.L. c. 23A, §§ 3A through 3F, etc.); and
- (d) when the applicant is a person as described in 310 CMR 40.0061(2)(b), a letter of community support from each municipality(ies) in which the property(ies) included in the Special Project Designation is located that describes the public benefit(s) of the project including economic development, infrastructure improvement, public housing, recreation or access) is provided in the application; each municipality may submit support for no more than 2 Special Project Designation applications per annum for applications made by a person as described in 310 CMR 40.0061(2)(b), except where the population of the municipality exceeds 50,000, in which case the municipality may submit support for 2 Special Project Designation applications plus 1 additional Special Project Designation application per 50,000 residents provided the total number per annum does not exceed 6.

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~~(de)~~ compliance with the response action deadline(s) for which an extension is sought under the Special Project Designation as described to 310 CMR 40.0061(1)(a) or (b) described in 310 CMR 40.0500 would unreasonably decrease the cost-effectiveness of project implementation.

~~(4) Disposal sites for which a Tier Classification Submittal has been submitted to the Department shall not be eligible for Special Project designation.~~

(4) A disposal site shall not be eligible for Special Project Designation as described in 310 CMR 40.0061(1)(b) unless a Tier Classification Submittal has been submitted to the Department previously or is submitted to the Department with the Special Project Designation application.

40.0062: Procedures for Applying for Special Project Designation

(1) Contents of Application. Each application filed with the Department shall include, at a minimum, the following:

- (a) a completed Transmittal Form for Permit Application and Payment using the form established by the Department for such purposes;
- (b) the applicable completed Permit Application using the form established by the Department for such purposes;
- (c) the applicable permit application fee payable pursuant to 310 CMR 4.00;
- (d) a photocopy of the fee payment;

(e) a statement as to whether the Special Project Designation is being sought pursuant to 310 CMR 40.0061(1)(a) or 40.0061(1)(b);

~~(ef)~~ a description of the project and its expected duration, an explanation of why Special Project ~~ed~~Designation is necessary to successfully implement the project, the requested deadline(s) to be extended under the Special Project Designation, the requested duration of the Special Project ~~ed~~Designation, and a description of how the project meets the criteria in 310 CMR 40.0061(3);

~~(fg)~~ a map of the land area for which the Special Project ~~ed~~Designation is sought, including identification of all properties that would be included;

~~(gh)~~ the Release Tracking Numbers for any known releases of oil and/or hazardous material at or from the subject properties that have been reported to the Department, ~~and a brief description of such the source(s), nature and extent of such releases, to the extent identified and characterized, including any known or probable Exposure Pathways; and the status of response actions;~~

(i) a list of any Status Reports, Phase Reports, or Completion Statements for any response actions that are in progress or have been completed at the time of Special Project Designation application that provides the dates on which such Reports or Statements were submitted to the Department or, for those response actions in progress, a description of the current status and projected schedule for completion of such response actions;

(j) when the application is made pursuant to 310 CMR 40.0061(1)(b) and a Tier Classification submittal has not been previously submitted to the Department, a Tier Classification submittal pursuant to 310 CMR 40.0500, and if applicable, a

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Tier I Permit; notwithstanding 310 CMR 40.0501(6), a single Tier Classification may be provided for multiple parcels and multiple disposal sites within the Special Project Designation

(~~hk~~) to the extent known, a description of response actions to be conducted under the Special Project Designation, including a proposed schedule, to the extent such actions have been planned in the Special Project, including a proposed schedule;

(l) a justification that an extension of the applicable deadline(s) sought under the Special Project Designation will not compromise the protection of health, safety, public welfare, or the environment, based on known and potential risks from releases at or from the property(ies) proposed for inclusion in the Special Project Designation and whether such risks can be managed throughout the duration of the Special Project Designation;

(m) when the applicant is a person as described in 310 CMR 40.0061(2)(b), a letter of community support is provided in the application that describes the public benefit(s) of the project pursuant to 310 CMR 40.0061(3)(d);

(n) when the applicant is a person as described in 310 CMR 40.0061(2)(b), a certification that he/she is an Eligible Person as defined in M.G.L. chapter 21E and 310 CMR 40.0006;

(io) the name, business address, and telephone number of the person who will be conducting response actions under the Special Project ~~e~~Designation;

(jp) a certification by the applicant and the person described in 310 CMR 40.0062(1)(i) (if different from the applicant) that, except as fully disclosed in the application, he or she is not subject to any outstanding administrative or judicial environmental enforcement action under any federal, state or local law;

(kq) ~~a demonstration~~ a copy of an access agreement obtained by that the applicant has notified from each of the persons who own or control the properties included in the Special Project ~~e~~Designation, if different from the applicant; and a description of how access to the properties will be obtained in order to perform response actions; and

(lr) the certification of the submittal required by 310 CMR 40.0009 by the applicant and the person described in 310 CMR 40.0062(1)(i) (if different from the applicant).

(2) An application for Special Project ~~e~~Designation shall not be deemed complete if the Department determines that such application:

(a) fails to contain all information and certifications required by 310 CMR 40.0062(1);

(b) fails to include the applicable fee established by 310 CMR 4.00; or

(c) is incorrectly filled out.

(3) An application for Special Project ~~e~~Designation shall be reviewed in accordance with the procedures described in 310 CMR ~~40.07204.04 and in accordance with the schedule described in 310 CMR 4.10(10)(j).~~

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(4) A Special Project Designation application pursuant to 310 CMR 40.0061(1)(b) may be submitted concurrently with a Tier Classification submittal and a Tier I Permit application, if applicable. When a Special Project Designation application is submitted concurrently with a Tier I Permit application, the applications shall, unless otherwise specified by the Department, be subject to a single review and approval process under 310 CMR 40.0720.

(45) Public Review of Application.

(a) Prior to the submission of a Special Project Designation Permit Application, each applicant shall take the following actions to provide notice to the public and local officials that the Special Project Designation Permit Application is available at DEP for review and comment:

1. a public notice shall be published in a newspaper that circulates in the community(ies) in which the property(ies) included in the Special Project Designation is located and in any newspapers that circulate in any other community(ies) which is, or is likely to be, affected by the disposal site; and
2. when the applicant is not the Chief Municipal Officer of the community(ies) where the project is located, at least three days prior to publication of the public notice, a copy of the notice shall be delivered by mail or hand to the Chief Municipal Officer and Board of Health in the community(ies) in which the disposal site is located and in any other community(ies) that is, or is likely to be, affected by the disposal site.

(b) The public notice required by 310 CMR 40.0062(4)(a) shall include, but not be limited to, the following information:

1. the address(s) of the properties proposed for inclusion in the Special Project Designation;
2. the DEP Release Tracking Number(s);
3. the name, address, and telephone number of the applicant(s);
4. the date on or about which the applicant(s) intends to file the application with the Department; and
6. a description of the procedures by which interested persons may review and comment on the Special Project Designation application.

(c) Interested persons may submit written comments related to the Special Project Designation Application within 20 days of the publication of the public notice required by 310 CMR 40.0062(4). Such written comments shall be submitted to the Department by mail or by hand delivery during normal Department business hours and to the Special Project Designation applicant.

(d) The Department shall consider and respond as it deems appropriate to public comments submitted in accordance with 310 CMR 40.0062(4).

(e) On its own initiative, the Department may extend the period for submission of public comments.

(f) When the Special Project Designation application is submitted concurrently with a Tier I Permit application pursuant to 310 CMR 40.0700 or Tier II Classification pursuant to 310 CMR 40.0500, public notice of the Special Project Designation application and Tier I Permit application or Tier II Classification, whichever is applicable, may be combined in a single public notice.

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~~Upon issuance of a proposed decision to grant or deny a Special Project designation, the Department shall conduct a public comment period.~~

~~(a) Upon such issuance, the applicant shall publish a legal notice of the proposed decision and its availability for public review and comment in a newspaper which circulates in the community in which the project is located. Such legal notice shall be in a form established by the Department and shall include information about how and where the public can review the application for Special Project designation and the deadline for submission of comments to the Department.~~

~~(b) At least three days prior to publication of the legal notice, the applicant shall deliver a copy of the notice by mail or hand to the Chief Municipal Officer and Board of Health in the community in which the project is located, and to the Department.~~

~~(c) The public comment period shall run for at least 20 calendar days. Upon request or upon its own initiative, the Department may extend the public comment period.~~

(56) Response Action Deadlines During Special Project Designation Application Review. Notwithstanding 310 CMR 40.0501(3), ~~a release proposed for inclusion within a Special Project designation~~

(a) the deadline for Tier Classification for a release proposed for inclusion within a Special Project Designation pursuant to 310 CMR 40.0061(1)(a) shall not be stayed subject to the deadline for Tier Classification while the Special Project Designation application is being reviewed by the Department;

(b) the deadline for the next applicable Comprehensive Response Action deadline for a release proposed for inclusion within a Special Project Designation pursuant to 310 CMR 40.0061(1)(b) shall be stayed while the Special Project Designation application is being reviewed by the Department.

(7) Response Action Deadlines if the Special Project Designation is Denied. If the Special Project Designation application is denied by the Department pursuant to 310 CMR 40.0060, 310 CMR 40.0700 and 310 CMR 4.00, then for applications submitted:

(a) pursuant to 310 CMR 40.0061(1)(a), the deadline for Tier Classification shall be the original deadline for Tier Classification (provided such deadline has not passed) or 90 days from the date of the Department's denial, whichever is later;

(b) pursuant to 310 CMR 40.0061(1)(b), the deadline for the next applicable Comprehensive Response Action submittal shall be the original deadline for the submittal (provided such deadline has not passed) or 90 days from the date of the Department's denial, whichever is later.

40.0063: Approval Process for Special Project Designation Permit Applications, Modifications, or Extensions.

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(1) Special Project Designation Permit Applications, Modifications, or Extensions shall be approved in accordance with the schedule and process in 310 CMR 40.0720.

(2) The Department shall consider the criteria in 310 CMR 40.0064 and all other available information when reviewing a Special Project Designation Permit Application or a Modification, or Extension submitted pursuant to 310 CMR 40.0060, and when making the following decisions:

- (a) to grant a Permit, Modification, or Extension;
- (b) to grant a Permit, Modification, or Extension with conditions; or
- (c) to deny a Permit, Modification, or Extension.

(3) Presumptive approval of a Special Project Designation Permit, Modification, or Extension pursuant to 310 CMR 40.0060 and 310 CMR 40.0720 means the applicant has approval to proceed with Response Actions in compliance with all applicable provisions of 310 CMR 40.0000 and that the Department has agreed to extension of deadlines (for Tier Classification or Comprehensive Response Actions, whichever is applicable), or modification sought in the Special Project Designation application. Such presumptive approval shall not be construed as approval by the Department of the scope or adequacy of plans or of the response actions as actually conducted, or as forgiveness of non-compliance with any provision of 310 CMR 40.0000.

40.00634: Department Decision Concerning Special Project Designation

(1) In considering whether to grant or deny an application, the Department shall consider the following:

- (a) the extent to which ~~whether~~ risks posed by releases at or from property proposed for inclusion in the Special Project ~~d~~Designation have been can be identified and characterized and whether known or potential risks can likely be identified and managed in a manner ~~which~~that protects health, safety, public welfare, and the environment;
- (b) whether the project meets the eligibility criteria in 310 CMR 40.0061(3);
- (c) whether compliance with the applicable response action deadline(s) described in 310 CMR 40.0500 that would be extended under the Special Project Designation would unreasonably decrease the cost-effectiveness of project implementation;
- (d) ~~whether implementation of the~~ the extent to which the implementation and coordination of proposed response actions at the disposal site(s) in the project area is feasible and likely, and whether the applicant and other participants (e.g., property owners, if different from applicant) have agreed to such implementation and coordination;
- (e) the ability and willingness of the applicant to perform necessary response actions;
- ~~(e)~~ the environmental compliance history of the applicant and the party who will implement proposed response actions (if different from the applicant);
- ~~(f)~~ whether significant public comments can be addressed in the decision;

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- (g) whether Department oversight of response actions is necessary; and
- (h) any other factor the Department deems relevant to the decision.

(2) The Department may deny a Special Project ~~d~~Designation application if it determines that:

- (a) the applicant has submitted information in the application ~~which~~that he or she knew or reasonably should have known was false or misleading;
- (b) the application was not completed by an applicable deadline;
- (c) risks posed by releases at or from the property~~(ies)~~ proposed for inclusion in the Special Project ~~d~~Designation ~~have not been sufficiently~~cannot be identified, and characterized and~~/or cannot be~~ managed to ensure that the deadline extension(s) sought under the Special Project Designation will not compromise the in a manner which protection of health, safety, public welfare, and the environment;
- (d) compliance with the response action deadline(s) the applicant is seeking to extend under the Special Project Designation~~described in 310 CMR 40.0500~~ would not unreasonably decrease the cost-effectiveness of project implementation;
- (e) implementation of the proposed response actions is not feasible or likely, or property owners included in the Special Project ~~D~~esignation, if different from the applicant, have not agreed to such implementation;
- (f) there is significant public opposition to granting the Special Project ~~d~~Designation with respect to performance of response actions;
- (g) the applicant is not able or willing to oversee and coordinate implementation of the Special Project; or
- (h) the Department intends to oversee, undertake or arrange for the performance of necessary response actions at the disposal site.

(3) Effect of Special Project Designation. The Department's decision to grant a Special Project Designation shall have the following effect on response action deadlines~~establish an appropriate schedule for complying with the requirements~~ of 310 CMR 40.0000.

- (a) For Special Project Designations sought pursuant to 310 CMR 40.0061(1)(a), No the deadline for Tier Classification shall be extended two years from the deadline for Tier Classification as specified at 310 CMR 40.0501(3);
- (b) For Special Project Designations sought pursuant to 310 CMR 40.0061(1)(b), the Comprehensive Response Action deadlines ~~Special Project designation~~ shall be ~~approved~~extended for a period of two years from the deadlines as specified in 310 CMR 40.0550 or 310 CMR 40.0560, whichever are applicable~~longer than five years from the date of the Department's decision~~.
- (c) Additional deadline extensions may be sought upon the expiration of the Special Project Designation.~~The designation may be extended for one or more periods not to exceed five years each upon Department approval~~ pursuant to 310 CMR 40.00667.

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(4) A Special Project ~~e~~D~~e~~signa~~t~~ion shall become effective upon issuance by the Department, unless a request for an adjudicatory hearing is made pursuant to 310 CMR 40.0050.

40.006~~45~~: Special Project Designation Conditions

(1) Any person performing response actions to address a release subject to a Special Project ~~e~~D~~e~~signa~~t~~ion shall comply with M.G.L. c. 21E, 310 CMR 40.0000, the terms and conditions of the Special Project ~~e~~D~~e~~signa~~t~~ion and any other applicable federal, state or local laws.

(2) All Special Project ~~e~~D~~e~~signa~~t~~ions shall have as conditions of ~~e~~D~~e~~signa~~t~~ion the requirement that the permittee shall:

- (a) oversee and coordinate the Special Project;
- (b) comply with the terms and conditions of response actions approved by the Department during the course of the Special Project, including, but not limited to, IRAs and RAMs;
- (c) comply with the notification regulations at 310 CMR 40.0300 for any release or threat of release of oil and/or hazardous material;
- (d) comply with the requirements for conducting Immediate Response Actions to address two- or 72-hour releases or threats of release or ~~e~~C~~e~~nditions of ~~s~~S~~u~~bstantial ~~r~~R~~e~~lease ~~m~~M~~i~~gration in accordance with 310 CMR 40.0400;
- (e) provide reasonable access to property owned or controlled by the permittee to employees, agents and contractors of the Department for all purposes authorized by c. 21E and to other persons performing response actions;
- (f) avoid engaging in ~~activities which~~activities that could prevent or impede the implementation of reasonably likely response actions in the future;
- (g) for Special Project Designations pursuant to 310 CMR 40.0061(a), file a Tier Classification Submittal for any release which that requires further response actions by the date the Special Project ~~e~~D~~e~~signa~~t~~ion expires, unless such ~~e~~D~~e~~signa~~t~~ion is extended pursuant to 310 CMR 40.0066;
- (h) for Special Project Designations pursuant to 310 CMR 40.0061(b), file the next applicable Comprehensive Response Action Submittal for any release that requires further response actions by the date the Special Project Designation expires, unless such Designation is extended pursuant to 310 CMR 40.0066;
- ~~(h)~~i) provide the Department with a report describing the status of response actions on an annual basis, unless an alternative schedule is established in the Special Project ~~e~~D~~e~~signa~~t~~ion; and
- ~~(i)~~j) comply with any other conditions necessary to ensure the appropriate implementation of response actions.

(3) Special Project ~~e~~D~~e~~signa~~t~~ion shall not grant any property rights or exclusive privileges, nor shall it authorize any injury to private property or taking of property rights.

40.006~~55~~: Modification of Special Project Designation

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- (1) The permittee may seek to modify a Special Project ~~d~~Designation to:
 - (a) add or remove property subject to the Special Project ~~d~~Designation; or
 - (b) change the schedule of proposed response actions, excluding extending the duration of the Special Project ~~d~~Designation; ~~or~~
 - ~~(c) change any other aspect of the Special Project designation.~~
- (2) A request for a modification of Special Project ~~d~~Designation shall include the following:
 - (a) a completed transmittal form using the form established by the Department for such purposes;
 - (b) a description of and rationale for the modification sought; and
 - (c) the certification required by 310 CMR 40.0009.
- (3) Special Project ~~d~~Designation modification shall ~~not~~ be subject to the approval processing requirements under in 310 CMR ~~4.00.40.0720.~~
- (4) In considering whether to grant or deny a request for a modification of a Special Project ~~d~~Designation, the Department shall consider the criteria in 310 CMR 40.006~~43~~(1).
- ~~(5) Within 60 days of receipt of a request to modify a Special Project Designation, the Department shall respond in writing with a proposed decision to either approve or deny the modification. Upon issuance of the Department's proposed decision, the requirements in 310 CMR 40.0062(4) shall apply.~~
 - ~~(a) In the absence of significant public comment providing a basis for the Department to deny the modification or significantly alter the Special Project designation proposed to be modified, the Department shall grant or deny the modification within 30 days following the close of the public comment period.~~
 - ~~(b) If significant public comment is received, the applicant shall have 30 days following the close of the public comment period to respond. Within 30 days of the Department's receipt of the applicant's response the Department shall grant or deny the modification.~~

40.006~~67~~: Extension of Special Project Designation

- (1) A permittee may request an extension of Special Project ~~d~~Designation. A request for an extension of Special Project ~~d~~Designation shall include the following:
 - (a) a completed transmittal form using the form established by the Department for such purposes;
 - (b) a statement as to why the extension is sought and the requested duration of the extension;
 - (c) a report describing the status of response actions and any known instances of noncompliance with 310 CMR 40.0000 associated with the Special Project ~~d~~Designation, and a plan and schedule for proposed or continuing response actions;

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- (d) an LSP Opinion indicating that the plans and/or reports submitted are in conformance with the requirements of 310 CMR 40.0000;
- (e) a certification by the applicant and the person described in 310 CMR 40.0062(1)(i) (if different from the applicant) that, except as fully disclosed in the request for extension, he or she is not subject to any outstanding administrative or judicial environmental enforcement action under any federal, state or local law; and
- (f) the certification required by 310 CMR 40.0009 by the permittee and the person described in 310 CMR 40.0062(1)(i) (if different from the applicant).

(2) A Special Project ~~d~~Designation ~~e~~Extension shall ~~not~~ be subject to the approval process~~ing requirements under in~~ 310 CMR ~~40.07204.00~~.

(3) In considering whether to grant or deny a request for an ~~e~~Extension of Special Project ~~d~~Designation, the Department shall consider the criteria in 310 CMR 40.006~~43(1)~~.

~~(4) Within 60 days of receipt of a request to extend a Special Project Designation, the Department shall respond in writing with a proposed decision to either approve or deny the extension. Upon issuance of the Department's proposed decision, the requirements in 310 CMR 40.0062(4) shall apply.~~

~~(a) In the absence of significant public comment providing a basis for the Department to deny the extension or significantly modify the Special Project designation proposed to be extended, the Department shall grant or deny the extension within 30 days following the close of the public comment period.~~

~~(b) If significant public comment is received, the applicant shall have 30 days following the close of the public comment period to respond. Within 30 days of the Department's receipt of the applicant's response the Department shall grant or deny the extension.~~

40.006~~78~~: Termination of Special Project Designation

(1) A permittee may voluntarily surrender a Special Project ~~d~~Designation provided that such permittee notifies the Department in writing of such surrender using the transmittal form established by the Department for such purpose and submits a report to the Department describing the status of response actions. If applicable, the permittee shall also comply with 310 CMR 40.0170(10).

(2) Special Project ~~d~~Designation shall terminate if:

(a) the permittee voluntarily surrenders the ~~d~~Designation as described in 310 CMR 40.0067(1);

(b) the permittee submits a Class A or B Response Action Outcome Statement pursuant to 310 CMR 40.1000 for the release(s) covered by the Special Project ~~d~~Designation;

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- (c) an assessment is completed that demonstrates that no releases or threats of release have occurred at or from the properties subject to Special Project [eDesignation](#); or
- (d) the Special Project [eDesignation](#) expires.

40.00689: Suspension and Revocation of Special Project Designation

- (1) The Department may suspend or revoke a Special Project [eDesignation](#) for cause including, but not limited to, the following:
 - (a) any violation of M.G.L. c. 21E, 310 CMR 40.0000, or Special Project [eDesignation](#) condition, or other applicable law or regulation;
 - (b) the submittal of false or misleading information by the permittee; or
 - (c) for nonpayment of annual compliance assurance fees required pursuant to 310 CMR 4.00.
- (2) Prior to the suspension or revocation of a Special Project [eDesignation](#) for cause, the Department shall issue a notice of intent to suspend or revoke the Special Project [eDesignation](#) which describes the basis for the proposed suspension or revocation and informs the person to whom it is issued of his or her right to request an adjudicatory hearing pursuant to M.G.L. c. 30A.
- (3) Notwithstanding 310 CMR 40.0068(2), suspension or revocation of a Special Project [eDesignation](#) because of nonpayment of annual compliance assurance fees shall be processed in accordance with 310 CMR 4.03(7).
- (4) Upon suspension or revocation of a Special Project [eDesignation](#), the Department shall establish new deadlines for [the Tier Classification or Comprehensive Response Action deadline\(s\) extended under the Special Project Designation–Tier Classification](#) for any releases ~~which~~[that](#) require further response actions.

The proposed revisions to 310 CMR 40.0500 and 40.0700 that follow are related to the Special Project Designation changes and in particular, the streamlined permit review process.

40.0500: Tier Classification and Response Action Deadlines

The regulations published at 310 CMR 40.0500 through 40.0599, cited collectively as 310 CMR 40.0500, establish requirements and procedures for the rendering of LSP Tier Classification Opinions, and deadlines for completing response actions at disposal sites. LSP Tier Classification Opinions are considered by the Department in determining the appropriate level of Departmental oversight for response actions conducted by RPs, PRPs and Other Persons at disposal sites.

40.0501: Scope and Applicability

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(1) 310 CMR 40.0500 establishes requirements and procedures for the performance of response actions at Tier I disposal sites, including, but not limited to, requirements for re-scoring such disposal sites and submittal requirements. For Tier I disposal sites, the specific deadlines for RPs, PRPs and Other Persons to achieve a Response Action Outcome pursuant to 310 CMR 40.1000 are determined in accordance with 310 CMR 40.0550 and any other applicable deadlines established in a Tier I Permit issued pursuant to 310 CMR 40.0700.

...

(6) Except as provided at 310 CMR 40.0062(1)(j), ~~An~~ individual Tier Classification Submittal may be for a single discrete disposal site located on one or more parcels of land or to address multiple discrete disposal sites located on a single parcel of land.

(7) An RP, PRP or Other Person may undertake Phase II and Phase III Comprehensive Response Actions pursuant to 310 CMR 40.0800 prior to Tier Classification without the Department's prior approval, unless otherwise prohibited by the Department.

40.0720: Approval Process for Tier I Permit Applications, Major Modifications, Transfers or Extensions and Special Project Designations.

(1) General. 310 CMR 40.0720 through 40.0729, cited collectively as 310 CMR 40.0720, together with 310 CMR 4.04, define the approval process for Tier I Permit Applications or a Modification, Transfer or Extension of a Tier I Permit. The provisions of 310 CMR 40.0720 also define the review and approval schedule and process for a Special Project Designation Permit Application or a Modification or Extension of a Special Project Designation Permit. The Department shall consider the requirements and criteria at 310 CMR 40.0060, when making a decision to grant or deny a Special Project Designation Permit or a Modification or Extension of a Special Project Designation Permit.

(2) The Department shall consider the criteria in 310 CMR 40.0730(1) and 40.0731(1) and all other available information when reviewing a Tier I Permit Application or a Modification, Transfer or Extension submitted pursuant to 310 CMR 40.0700, and when making the following decisions:

- (a) to grant a Permit, Modification, Transfer or Extension;
- (b) to grant a Permit, Modification, Transfer or Extension with conditions pursuant to 310 CMR 40.0740(3)(n); or
- (c) to deny a Permit, Modification, Transfer or Extension.

(3) Commencement of Schedule. For purposes of 310 CMR 40.0720 and 310 CMR 4.04(2)(a), the computation of time periods shall commence on the day following the day a complete Tier I Permit Application, Modification, Transfer or Extension is received at the appropriate regional office of the Department or on the

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day following the day the applicable permit application fee is received, as described in 310 CMR 40.0008, whichever occurs later.

(4) A Tier I Permit or a Major Modification, Transfer or Extension of a Tier I Permit shall be presumed approved without conditions 45 days from the date the complete Application was received by the Department pursuant to 310 CMR 40.0720(3), unless prior to the end of the 45 day period, the Department provides to the applicant(s) one of the following:

- (a) a Decision to deny the applicant a Tier I Permit or a Major Modification, Transfer or Extension of a Tier I Permit, based upon the criteria in 310 CMR 40.0730 and 40.0731;
- (b) a Decision to grant the applicant a Tier I Permit or a Major Modification, Transfer or Extension of a Tier I Permit with conditions pursuant to 310 CMR 40.0740(3)(n), based upon the criteria in 310 CMR 40.0730; or
- (c) a Notice of Extended Review indicating that because of the nature and complexity of the review, based on the criteria set forth in 310 CMR 40.0730(1), the Department requires an additional 45 days from the date the Notice of Extended Review is issued by the Department to complete its review.

(5) If the Department issues the applicant(s) a Notice of Extended Review in accordance with 310 CMR 40.0720(4)(c), the Tier I Permit or a Major Modification, Transfer or Extension of a Tier I Permit shall be presumed approved without conditions 45 days from the date the Department issued the Notice of Extended Review, unless prior to the end of the 45 day period, the Department provides to the applicant(s) with one of the following:

- (a) a Decision to deny the applicant a Tier I Permit or a Major Modification, Transfer or Extension of a Tier I Permit, based upon the criteria in 310 CMR 40.0730 and 40.0731; or
- (b) a Decision to grant the applicant a Tier I Permit or a Major Modification, Transfer or Extension of a Tier I Permit with conditions pursuant to 310 CMR 40.0740(3)(n), based upon the criteria in 310 CMR 40.0730.

(6) Presumptive approval of a Tier I Permit, Major Modification, Transfer or Extension pursuant to 310 CMR 40.0720 means the RP, PRP or Other Person has approval to proceed with Response Actions in compliance with all applicable provisions of 310 CMR 40.0000. Such presumptive approval shall not be construed as approval by the Department of the scope or adequacy of plans or of the response actions as actually conducted, or as forgiveness of non-compliance with any provision of 310 CMR 40.0000.

(7) Extensions of Review Schedule by Agreement. The applicant and the Department may, by written agreement, extend any schedule for timely action or individual portion thereof for a Tier I Permit application pursuant to 310 CMR 40.0720 or 310 CMR 4.00.

(8) Tier I Permit, Transfer, Extension or Major Modification Applications Pending as of June 27, 2003. Unless otherwise specified by the Department, Tier I Permit,

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Transfer, Extension or Major Modification applications pending approval as of June 27, 2003 shall be presumed approved without conditions 45 days from June 27, 2003 or 75 days from the date such application was submitted, whichever date is sooner.

PROPOSED REVISIONS TO SUBPART C: NOTIFICATION OF RELEASES AND THREATS OF RELEASE OF OIL AND HAZARDOUS MATERIAL; IDENTIFICATION AND LISTING OF OIL AND HAZARDOUS MATERIAL

4. NOTE TO REVIEWERS: *DEP proposes to clarify at 310 CMR 40.0313 that a condition of Substantial Release Migration only triggers notification at a disposal site if that condition is associated with a release that otherwise triggers a notification obligation.*

40.0313: Releases Which Require Notification Within 72 Hours

Except as provided in 310 CMR 40.0317 or 40.0332(7), persons required to notify under 310 CMR 40.0331 shall notify the Department not more than 72 hours after obtaining knowledge that a release of oil and/or hazardous material(s) meets one or more of the following sets of criteria:

...

(5) a condition of Substantial Release Migration where such condition is associated with a release for which notification is, or has at anytime in the past been, otherwise required in accordance with 310 CMR 40.0300.

5. NOTE TO REVIEWERS: *DEP proposes to clarify at 310 CMR 40.0314 that notification is required when there is a substantial likelihood of a release from an Underground Storage Tank, as defined at 40.0006, which includes both the tank and the piping.*

40.0314: Threats of Release Which Require Notification Within 72 Hours

Except as provided in 310 CMR 40.0317, persons required to notify under 310 CMR 40.0331 shall notify the Department not more than 72 hours after obtaining knowledge of a threat of release of oil and/or hazardous material to the environment from an underground storage tank, as established by a tank test conducted in conformance with the methodology prescribed for that test which indicates:

(1) there is a substantial likelihood of a leak equal to or greater than 0.05 gallons per hour in a single walled Underground Storage Tank;

(2) there is a substantial likelihood of a leak equal to or greater than 0.05 gallons per hour in the inner wall of a double-walled Underground Storage Tank; or

(3) there is a substantial likelihood of a leak in the outer wall of a double-walled Underground Storage Tank as established by the relevant parameters of that test.

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6. NOTE TO REVIEWERS: *DEP proposes to revise 310 CMR 40.0317(16) to clarify the notification requirements for parties who obtain knowledge of a release when they are provided sampling data for their property or they have received notice that their property is within the boundaries of a disposal site.*

40.0317 Releases and Threats of Releases Which Do Not Require Notification

...

(16) releases indicated by the presence of oil and/or hazardous material in concentrations or quantities which would otherwise meet one or more of the sets of criteria set forth in 310 CMR 40.0313 through 310 CMR 40.0315 at a disposal site where:

- (a) a response action is being undertaken in compliance with the provisions of 310 CMR 40.0000;
- (b) a release notification was previously provided to the Department for the ~~property~~ disposal site on which the release has been observed or documented; and
- (c) such presence of oil and/or hazardous material is consistent with the types, nature, and quantities of oil and/or hazardous material for which that notification was provided to the Department;

7. NOTE TO REVIEWERS: *DEP proposes to clarify 310 CMR 40.0317(17). The intent of this provision is to specify circumstances that would require notification at disposal sites for which closure of response actions had previously been documented (otherwise referred to as the "re-opener" provision).*

8. NOTE TO REVIEWERS: *DEP is proposing to add a new notification exemption at 310 CMR 40.0317(22) for naturally occurring levels of arsenic and beryllium in soils in Worcester County and in Boston Blue Clay. Arsenic and beryllium are known to be naturally present in these soils at concentrations that, in some instances, exceed the Reportable Concentrations. Generally, DEP maintains that a Licensed Site Professional should make determinations as to whether levels in the environment are attributable to natural conditions and therefore constitute Background after notification has been provided to the agency. However, DEP is proposing that an exception be made in the case of arsenic and beryllium in Worcester County and Boston Blue Clay soils based on the prevalence of notifications made that are otherwise not associated with an actual release of oil or hazardous material.*

40.0317: Releases and Threats of Release Which Do Not Require Notification

Notwithstanding the provisions of 310 CMR 40.0311 through 40.0315, the following releases and threats of release of oil and/or hazardous material are exempt from the notification requirements set forth in 310 CMR 40.0300:

...

(17) releases indicated by the presence of oil and/or hazardous material at disposal sites closed out in accordance with the provisions of 310 CMR 40.0000 in concentrations which would otherwise meet one or more of the sets of criteria set forth in 310 CMR 40.0313 or 40.0315 unless the presence of such oil and/or hazardous material would negate or change such closure determinations or statements were that presence taken into account in the preparation thereof, or changes in activities, uses, and/or exposures at the disposal site require notification to the Department pursuant to the provisions of 310 CMR 40.0020. In this context, closure determinations or statements include:

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- (a) a disposal site where a Response Action Outcome Statement has been submitted to the Department in compliance with the provisions of 310 CMR 40.1000,
- (b) a disposal site where a No Further Action Letter has been submitted to the Department in compliance with the provisions of 310 CMR 40.0600,
- (c) a disposal site where the Department has made a written determination that no further actions are required,
- (d) a disposal site where an LSP Evaluation Opinion has been submitted to the Department in compliance with 310 CMR 40.0600 stating either that the site is not a disposal site for which notification is required pursuant to 310 CMR 40.0300 and no further response actions are required or that completed response actions meet the requirements of a Response Action Outcome, or
- (e) a disposal site where a Waiver Completion Statement has been submitted to the Department in compliance with the provisions of 310 CMR 40.537 and/or 310 CMR 40.0630.

...

(20) releases of chloroform in groundwater attributable to naturally-occurring ecological processes and/or leakage or discharges from a public water supply system; ~~and~~

(21) releases of oil or waste oil of less than a Reportable Quantity that result in a sheen on a surface water, provided that:

- (a) federal officials receive notice of such release pursuant to the Federal Water Pollution Control Act as amended;
- (b) a response occurs as directed by those federal officials and according to other federal, state or local requirements applicable to such a release and response;
- (c) the sheen does not persist for more than 24 consecutive hours; and
- (d) the sheen does not recur at the same location within any 30 day period; ~~and~~

(22) arsenic or beryllium detected in Boston Blue Clay or arsenic in soil in Worcester County that is ubiquitous and consistently present in the environment at and in the vicinity of the sampling location and attributable to geologic or ecologic conditions.

9. NOTE TO REVIEWERS: *DEP proposes revisions to 310 CMR 40.0334 and 310 CMR 40.0371 that will require that more specific location information be provided when a release notification is made to DEP. The additional information will provide DEP more accuracy in identifying the release location for GIS purposes and in cross-referencing with other databases.*

40.0334: Content of the Notification

Oral notification to the Department pursuant to 310 CMR 40.0333(1)(a) shall consist of the following information to the extent known to the person responsible for providing the notification:

- (a) the name and telephone number of the caller;
- (b) the location of the release or threat of release, including, where applicable:
 - 1. the address [street name and number, city or town, and zip code]; and

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2. a narrative description of the location (i.e., location aid such as mile marker, business type/name);

- (c) the date and time the release occurred;
- (d) the set(s) of notification criteria that is the basis for notification;
- (e) the name of the oil and/or hazardous material(s) released or of which there is a threat of release;
- (f) the approximate quantity of the oil and/or hazardous material(s) which has been released or of which there is a threat of release;
- (g) the source of the release or threat of release;
- (h) a brief description of the release or threat of release;

...

10. NOTE TO REVIEWERS: DEP proposes amending 310 CMR 40.0335 to clarify that clause (1)(a) is specific to a reported release and clause (1)(b) is specific to a reported threat of release. Parties have interpreted the current provision as allowing the retraction of a threat of release notification if an actual release did not occur. The intent, however, is that a notification of a threat of release may not be retracted if the conditions of a threat of release existed, regardless of whether a release actually occurred.

40.0335: Retracting a Notification

(1) A notification of a release or threat of release of oil and/or hazardous material made by a person described in 310 CMR 40.0331(1) may be retracted in those cases where additional information obtained subsequent to such notification substantiates that:

- (a) in the case of a reported release, no release ~~did not~~ actually occurred;
- (b) in the case of a reported threat of release, conditions posing a threat of release did not actually exist; or
- (c) the subject release or threat of release did not meet one or more of the sets of notification criteria specified in 310 CMR 40.0300. Retractions of this nature shall only be made by the person described at 310 CMR 40.0331(1) who originally provided notification to the Department of such release or threat of release, or, in cases where notification was made on behalf of a corporate entity, by another authorized employee or agent of that corporation.

...

40.0371: Release Notification Form

(1) Written notification of releases and threats of release required under 310 CMR 40.0333 shall be submitted to the Department on a form established by the Department for such purposes and shall include, without limitation, the following:

- (a) the location ~~and address~~ where the release or threat of release occurred, including:
 - 1. the street number, city or town, and zip code, where applicable; and
 - 2. the longitude and latitude (degrees, minutes, seconds), the Massachusetts state plan xy coordinates, or the universal transverse mercator coordinates (Northing and Easting in meters using North American Datum 83) for the field verified location of the initial identification point;
- (b) the time and date when the release or threat of release occurred;

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- (c) the time(s) and date(s) when the person(s) required to provide the notification to the Department pursuant to 310 CMR 40.0331 obtained knowledge that the release or threat of release met one or more sets of notification criteria established in 310 CMR 40.0311 through 40.0315;
- (d) the time(s) and date(s) when oral notification of the release or threat of release was made to the Department, if applicable;
- (e) the set(s) of notification criteria met, as specified at 310 CMR 40.0311 through 40.0315;
- (f) the names and amounts of oil and/or hazardous material released or threatened to be released;
- (g) the names and mailing addresses of the owners of all properties impacted by the release or threat of release;
- (h) the name(s) and address(es) of the person(s) providing the notification of the release or threat of release;
- (i) the affiliation of the person(s) making the notification to the site of the release or threat of release, as described in 310 CMR 40.0331;
- (j) a signed and dated certification statement from the person(s) reporting the release or threat of release attesting to the truth and accuracy of the information provided, as specified at 310 CMR 40.0009; and
- (k) such other information as the Department may from time to time determine is necessary and useful in the fulfillment of its statutory obligations under M.G.L. c. 21E and 310 CMR 40.0300.

PROPOSED REVISIONS TO SUBPART D: PRELIMINARY RESPONSE ACTIONS AND RISK REDUCTION MEASURES

11. NOTE TO REVIEWERS: *DEP proposes to delete 310 CMR 40.0412(3) and 40.0420(3)(c), which are no longer necessary because the revisions to 310 CMR 40.0313 that took effect on 10/29/99 included a Condition of Substantial Release Migration as a 72 hour notification condition. A new provision would establish a requirement to conduct an IRA at sites which pose an Imminent Hazard.. Generally IRAs for Imminent Hazards would be triggered by the 2-hour notification condition [40.0412(1)], but there is a universe of sites at which an IRA would not be conducted because the condition happens to be covered by a notification exemptions in 310 CMR 40.0317. Bu inserting the new (3) below, sites that are already in the MCP and which have conditions that pose an Imminent Hazard would be required to conduct an IRA. The revision also corrects a typographical error at 310 CMR 40.0420.*

40.0412: Sites Where an Immediate Response Action is Required

Immediate Response Actions shall be conducted at the following sites:

...

~~(3) disposal sites where a condition of Substantial Release Migration has been identified; and~~

(3) sites where a release of oil and/or hazardous material has resulted in conditions which have been determined to pose an Imminent Hazard pursuant to 310 CMR 40.0950; and

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(4) any other site or vessel where the Department determines that immediate or accelerated response actions are necessary to prevent, eliminate, or minimize damage to health, safety, public welfare or the environment.

40.0420: Requirements, Approvals, and Time Lines For Conducting Immediate Response Actions

...

(3) RPs, PRPs and Other Persons shall communicate to the Department their intentions to conduct Immediate Response Actions which are required pursuant to 310 CMR 40.0412. Such communication shall be provided orally to the Department on the earliest of the following dates:

(a) at the time an RP, PRP, or Other Person is providing oral notification to the Department of a "2 Hour" or "72 Hour" release or threat of release described in 310 CMR 40.0311 through 40.0314;

(b) at the time a person is orally informed by the Department that they are an RP or PRP for a site at which an Immediate Response Action is required pursuant to 310 CMR 40.0412;

~~(c) within 72 hours of the time an RP, PRP, or Other Person obtains knowledge of one or more of the conditions of Substantial Release Migration specified in 310 CMR 40.0413;~~

(cd) within 72 hours of the time a person receives a Notice of Responsibility from the Department indicating that they are an RP or PRP for a site at which an Immediate Response Action is required pursuant to 310 CMR 40.0412; or

(de) within an Interim Deadline specified by the Department pursuant to 310 CMR 40.0167.

...

(7) Except as provided at 310 CMR 40.0420(8), and without regard to whether oral approval was given by the Department to conduct or initiate Immediate Response Actions, RPs and other persons conducting response actions shall submit to the Department an Immediate Response Action Plan, within the earliest of the following time periods:

...

(b) within 60 days of orally communicating to the Department knowledge of a eCondition of Substantial Release Migration at a disposal site;

12. NOTE TO REVIEWERS: *A person conducting response actions may use a RAM to facilitate the construction of a permanent structure over or immediately adjacent to contaminated soil. This practice raises concerns, however, that future remedial options will be inappropriately limited or precluded. That is, once a new building or other permanent structure is erected, it may not be feasible to remove or treat additional volumes of contaminated soils beneath or adjacent to the new structure.*

310 CMR 40.0442(1) already contains language to address these concerns. RAMs SHALL NOT:

- *be implemented without a level of understanding of the disposal site conditions and surrounding receptors sufficient to support the actions taken (310 CMR 40.0442(1)(a))*

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- *be conducted in a manner that is likely to result in the exposure of surrounding human or ecological receptors to levels of oil and/or hazardous material that could pose a significant risk (310 CMR 40.0442(1)(b))*
- *prevent or impede the implementation of likely future response actions (310 CMR 40.0442(1)(d))*
- *be conducted in a manner inconsistent with the Response Action Performance Standard described in 310 CMR 40.0191 (310 CMR 40.0442(1)(e))*

To be in compliance with the foregoing provisions, several “focused” activities must be included as part of the RAM – site assessment, risk characterization, feasibility study, and any response actions necessary to ultimately achieve a level of No Significant Risk at the disposal site. “Focused” means that these activities may be limited to the area beneath and adjacent to the footprint of the proposed permanent structure. The proposed changes at 310 CMR 40.0442(3) are intended to codify the guidelines set forth in DEP’s “Construction of Buildings in Contaminated Areas Policy.”

40.0442: Scope and Types of Release Abatement Measures

...

(3) Notwithstanding 310 CMR 40.0442(1)(d), Release Abatement Measures may include construction of a permanent structure that could prevent or impede the implementation of reasonably likely response actions in the future, provided that prior to or concurrent with conducting such activities, the following are completed for the area within and adjacent to the footprint of the proposed permanent structure in a manner that achieves the substantive technical standards set forth in 310 CMR 40.0800 and 40.0900:

(a) a site assessment;

(b) a risk characterization;

(c) a feasibility evaluation;

(d) if the Exposure Point Concentrations of contaminants under such permanent structure exceed applicable soil Upper Concentration Limits (UCLs) specified in 310 CMR 40.0996(7), the feasibility of reducing such concentrations to levels at or below applicable UCLs, pursuant to 310 CMR 40.0860(4);

(e) elimination or control of any source of oil and/or hazardous material as specified in 310 CMR 40.1003(5); and

(e) any remedial actions deemed necessary to ensure the eventual achievement of a level of No Significant Risk for the entire disposal.

(4)(3) A cap or engineered barrier, as defined in 310 CMR 40.0996(4), that is constructed as a Release Abatement Measure will not be considered part of a Permanent Solution at a disposal site, unless and until a Phase III performed pursuant to the provisions of 310 CMR 40.0850 demonstrates the lack of a feasible alternative.

13. NOTE TO REVIEWERS: *In addition to the construction-related changes to 310 CMR 40.0442, DEP also proposes to replace the term “excavation” with “generation” in subsection (4) to make consistent with the “Construction of Buildings in Contaminated Area” policy (WSC # 00-425).*

(5)(4) Release Abatement Measures shall not involve the generation ~~excavation~~ of greater than 1500 cubic yards (cumulative, for the disposal site in question) of soil contaminated by oil and/or hazardous material at concentrations equal to or greater than applicable Reportable Concentrations, unless a statement is provided in the

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Release Abatement Measure Plan by the RP, PRP, or Other Person conducting response actions certifying that, based upon information and opinions provided by an LSP, such persons have sufficient financial resources to manage excavated materials in the manner and time frames specified at 310 CMR 40.0030.

14. NOTE TO REVIEWERS: *DEP proposes to clarify the timeline for submitting Status Reports at 310 CMR 40.0425, 40.0445 and 40.0465. These revisions are intended to clarify that a modified RAM Plan does not “restart” the clock for the submittal of status reports (e.g., due at day 120 and every 6 months thereafter). The proposed revision also sets forth a requirement that each Status Report documents the period since the last report. That way, if more than one status report deadline has been missed, the PRP, RP, or Other Person can return to compliance by submitting one report that covers the period since the last report.*

40.0425: Status Reports on Immediate Response Actions

(1) Unless otherwise specified in writing by the Department, a person conducting Immediate Response Actions shall submit a written Status Report to the Department 120 days after the date on which that person first communicated to the Department his or her intention to conduct that Immediate Response Action.

(2) Following submission of the first such Status Report, additional Status Reports shall be submitted to the Department every six months thereafter, until such time as an Immediate Response Action Completion Report is submitted to the Department, as described in 310 CMR 40.0427. Each Status Report shall document Immediate Response Action activities occurring over the period of time since the previously submitted Status Report.

40.0445: Status Reports on Release Abatement Measures

(1) Persons conducting Release Abatement Measures shall submit a Status Report ~~to the Department 120 days following oral, written or presumed approval of the Release Abatement Measure, whichever occurred sooner, or, in cases where approval is not required,~~ 120 days following receipt by the Department of the original a complete Release Abatement Measure Plan, and every six months thereafter, until a Release Abatement Measure Completion Report, in accordance with the provisions of 310 CMR 40.0446, has been submitted to the Department. Each Status Report shall document Release Abatement Measure activities occurring over the period of time since the previously submitted Status Report.

40.0465: Status Reports on Utility-related Abatement Measures

(1) Persons conducting Utility-related Abatement Measures shall submit a Status Report to the Department 120 days following notification to the Department of their intentions to conduct a Utility-related Abatement Measure pursuant to 310 CMR 40.0462(1)(b), and every six months thereafter, until a Utility-related Abatement Measure Completion Report is submitted to the Department in accordance with 310 CMR 40.0466. Each Status Report shall document Utility-related Abatement Measure activities occurring over the period of time since the previously submitted Status Report.

...

REMEDIAL SYSTEM MONITORING REPORTS

15. NOTE TO REVIEWERS: *DEP proposes to revise various sections at 310 CMR 40.0400 and 310 CMR 40.0800 to implement the use of the Remedial System Monitoring Report (RSMR). The RSMR is intended to document the operation and monitoring of Active Remedial Systems, the application of Remedial Additives and monitoring conducted as Active Remedial Monitoring Program.*

Remedial operations present an especially challenging element of a privatized program. A poorly executed remedial measure can result in immediate, direct, and acute exposures to surrounding populations, and/or can otherwise significantly exacerbate site conditions. Furthermore, remedial systems are complicated, requiring continued maintenance. When breakdowns occur, corrections need to be made in a timely fashion. As the June 30, 1998 Draft Generic Environmental Impact Report indicated, DEP found compliance problems at 70 percent of inspected systems. Moreover, a review of submitted Status Reports and the lack of required submittals, found that systems in operation more than 1 year had a 79 percent non-compliance rate.

Under current MCP requirements, reports on remedial activities are provided by means of Status Reports that are submitted every six months. Therefore, up to six months may pass before DEP learns that a system may not be operating in compliance, or that the system has been shut down/broken down. Obtaining this information months after the fact may not be sufficient to safeguard public health and the environment. In addition, there are no specifications on the manner in which monitoring data must be submitted, making it difficult for DEP to keep track of all the remedial systems that are in operation. Most other state and federal environmental agencies typically require submittal of monthly data on a specified reporting form/format.

Given the unreliable and/or high-maintenance nature of remedial treatment systems, the type and magnitude of short- and long-term problems caused by malfunctioning systems, and the poor track record observed by DEP to date, DEP proposes to standardize the reporting format and frequency with which monitoring data are submitted to DEP. In short, the RSMR was developed to:

- standardize the manner in which operational information and monitoring data are submitted*
- allow for increased frequency of submittals*

In addition to addressing problems associated with operating such systems, the RSMR also will also serve to satisfy the primacy and permitting requirements of DEP's Underground Injection Control (UIC) Program at 21E sites.

The proposed revisions include creating a new definition of Active Remedial System and revisions to the definition of Active Operation and Maintenance, to cover monitoring of remedies that do not use mechanical or electro-mechanical ("active") devices, but do involve an active monitoring program (e.g., monitoring in conjunction with the application of remedial additives, natural attenuation or reactive wall remedies.)

See also the change proposed at 310 CMR 40.0893 (Note to Reviewers #21) related to the definition of Active Operation and Maintenance and Remedy Operation Status.

ELECTRONIC SUBMITTAL OF REMEDIAL SYSTEM MONITORING REPORTS

16. NOTE TO REVIEWERS: *In order to facilitate the timely identification of problems that need to be corrected in the short-term, the Department is proposing to require that all Remedial System Monitoring Reports be submitted electronically. Electronic submittals will allow the Department to routinely run checks on all sites where Active Operation and Maintenance is ongoing and target follow-up inspections accordingly. The proposed regulatory language requires that the RSMR be submitted to DEP monthly*

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when an Active Operation and Maintenance of a remedial action is being conducted to address an Imminent Hazard or Condition of Substantial Release Migration. For all remedies where that involve an Active Remedial System or the application of Remedial Additive, the proposal requires the submittal of a RSMR every three months. For remedies that involve Active Remedial Monitoring Programs without the use of Remedial Additives (e.g., Monitored Natural Attenuation, permeable reactive barriers) annual submittal of the RSMR is proposed. The proposed language is also drafted so that the RSMR will be submitted concurrently with the applicable Status Reports at those intervals when both are due.

REVIEW OF THE REMEDIAL SYSTEM MONITORING REPORT TRANSMITTAL FORM

17. NOTE TO REVIEWERS: *The electronic RSMR format is not part of the MCP. In considering the proposed amendment to require the electronic submission of the RSMR, however, the Department encourages parties to review the draft transmittal form. The RSMR transmittal form is under development and scheduled for completion on or before the date that the Remedial System Monitoring Report requirements take effect. The Department welcomes comments on the RSMR form itself in addition to comments the proposal to require its use. The draft RSMR form is posted with the MCP public hearing draft at <http://www.mass.gov/dep/bwsc/news.htm>.*

40.0006: Terminology, Definitions and Acronyms

Active Remedial System means a remedial system that relies upon the continual or periodic use of an on-site or in-situ mechanical or electro-mechanical device.

Active Remedial Monitoring Program means sampling and analyzing environmental media as part of a remedy that does not employ an Active Remedial System (e.g., application of Remedial Additives, Monitored Natural Attenuation, reactive walls). The term excludes landscaping and other activities that are not directly involved in conducting the remedial programs.

Active Operation and Maintenance means ~~remedial activities related to: (a) operations which rely upon the continuing or periodic use of on-site or in-situ mechanical and/or electro-mechanical systems or devices, and maintaining an Active Remedial System or (b) conducting an Active Remedial Monitoring Program excluding monitoring and landscaping.~~

Monitored Natural Attenuation means a systematically designed and monitored Comprehensive Response Action that employs physical, chemical, and/or biological processes under favorable conditions to act without human intervention and primarily through degradative mechanisms to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater, as described in publications by EPA, the Department and other sources that are generally accepted by professionals conducting response actions.

40.0425: Immediate Response Action Status and Monitoring Reports ~~on Immediate Response Actions~~

(1) Unless otherwise specified in writing by the Department, a person conducting Immediate Response Actions shall submit a written Status Report to the Department 120 days after the date on which that person first communicated to the Department his or her intention to conduct that Immediate Response Action.

(2) Following submission of the first such Status Report, additional Status Reports shall be submitted to the Department every six months thereafter, until such time as

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an Immediate Response Action Completion Report is submitted to the Department, as described in 310 CMR 40.0427. Each Status Report shall document Immediate Response Action activities occurring over the period of time since the previously submitted Status Report.

(3) Immediate Response Action Status Reports shall contain, at a minimum, the following information:

- (a) the status of assessment and/or remedial actions;
- (b) any significant new site information or data;
- (c) details of and/or plans for the management of Remediation Waste , Remedial Waste-water and/or Remedial Additives;
- (d) ~~monitoring data related to the operation of remedial systems, including treatment works discharging Remedial Wastewater, where applicable;~~
- (~~ed~~) any other information required by the Department in its approval of the Immediate Response Action Plan; and
- (~~fe~~) an LSP Opinion as to whether the Immediate Response Action is being conducted in conformance with the Immediate Response Action Plan and any conditions of approval established by the Department.

(4) Status Reports shall not be required for sites where an Immediate Response Action Completion Report or a Response Action Outcome Statement is received by the Department prior to the date on which the first Status Report is required pursuant to 310 CMR 40.0425(1).

(5) Immediate Response Action Status Reports shall be submitted to the Department using a transmittal form established by the Department for such purposes.

(6) At disposal sites where Active Operation and Maintenance of a remedial action is being conducted, in addition to and/or in conjunction with the submittal of IRA Status Reports, a Remedial System Monitoring Report shall be electronically submitted to the Department on a form established by the Department for such purposes at the following frequency:

- (a) when an Immediate Response Action includes Active Operation and Maintenance of a remedial action to address an Imminent Hazard or Condition of Substantial Release Migration, with the first IRA Status Report and every 30 days thereafter. In such cases where an Active Remedial System is not operating until after the submittal of the first IRA Status Report, the Remedial System Monitoring Report shall be submitted on the next monthly anniversary of the submittal of the first IRA Status Report;
- (b) when an Immediate Response Action includes the operation of an Active Remedial System or the application of Remedial Additives to address conditions that do not pose an Imminent Hazard or Condition of Substantial Release Migration, with the first IRA Status Report and every three months thereafter. In such cases where the operation of an Active Remedial System is not conducted until after the submittal of the first IRA Status Report, the Remedial System Monitoring Reports shall be submitted on the next 3-month anniversary of the submittal of the first IRA Status Report.

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40.0445: Release Abatement Measure Status and Monitoring Reports on Release Abatement Measures

- (1) Persons conducting Release Abatement Measures shall submit a Status Report ~~to the Department 120 days following oral, written or presumed approval of the Release Abatement Measure, whichever occurred sooner, or, in cases where approval is not required,~~ 120 days following receipt by the Department of ~~the initial a complete~~ Release Abatement Measure Plan, and every six months thereafter, until a Release Abatement Measure Completion Report, in accordance with the provisions of 310 CMR 40.0446, has been submitted to the Department. Each Status Report shall document Release Abatement Measure activities occurring over the period of time since the previously submitted Status Report.
- (2) Release Abatement Measure Status Reports shall contain, at a minimum, the following information:
- (a) the status of response operations;
 - (b) any significant new site information or data;
 - (c) details of and/or plans for the management of Remediation Waste, Remedial Waste-water and/or Remedial Additives;
 - (d) ~~monitoring data from the operation of remedial systems, including treatment works discharging Remedial Wastewater where applicable;~~
 - (~~ed~~) any other information that the Department during its review and evaluation of a Status Report determines to be necessary to complete said Status Report, in view of site specific circumstances and conditions; and
 - (~~fe~~) an LSP Opinion as to whether the Release Abatement Measure is being conducted in conformance with the Release Abatement Measure Plan and any conditions of approval established by the Department.
- (3) Status Reports shall not be required for sites where a Release Abatement Measure Completion Report or a Response Action Outcome Statement is received by the Department prior to the date on which the first Status Report is required pursuant to 310 CMR 40.0445(1).
- (4) Release Abatement Measure Status Reports shall be submitted to the Department using a transmittal form established by the Department for such purposes.
- (5) At disposal sites where Active Operation and Maintenance of a remedial action is being conducted, in addition to and/or in conjunction with the submittal of RAM Status Reports, a Remedial System Monitoring Report shall be electronically submitted to the Department on a form established by the Department for such purposes at the following frequency:
- (a) when a Release Abatement Measure includes the operation of an Active Remedial System or the application of Remedial Additives, with the first RAM Status Report and every three months thereafter. In such cases where the operation of an Active Remedial System or application of Remedial Additives is not conducted until after the submittal of the first RAM Status Report, the Remedial System Monitoring Reports shall be submitted on the next 3-month anniversary of the submittal of the first RAM Status Report;
 - (b) when a Release Abatement Measure includes conducting an Active Remedial Monitoring Program without the application of Remedial Additives, with the first

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RAM Status report and annually thereafter. In such cases where the Active Remedial Monitoring Program is initiated after the submittal of the first RAM Status Report, the Remedial System Monitoring Report shall be submitted on the next 6-month anniversary of the submittal of the first RAM Status Report.

40.0465: ~~Status Reports on~~ Utility-related Abatement Measures ~~Status and Monitoring Reports~~

- (1) Persons conducting Utility-related Abatement Measures shall submit a Status Report to the Department 120 days following notification to the Department of their intentions to conduct a Utility-related Abatement Measure pursuant to 310 CMR 40.0462(1)(b), and every six months thereafter, until a Utility-related Abatement Measure Completion Report is submitted to the Department in accordance with 310 CMR 40.0466. Each Status Report shall document Utility-related Abatement Measure activities occurring over the period of time since the previously submitted Status Report.
- (2) Utility-~~release~~related Abatement Measure Status Reports shall contain, at a minimum, the following information:
- (a) the status of response operations;
 - (b) any significant new site information or data;
 - (c) details of and/or plans for the management of Remediation Waste, Remedial Waste-water and/or Remedial Additives;
 - ~~(d) monitoring data from the operation of remedial systems, including treatment works discharging Remedial Wastewater where applicable;~~
 - (ed) any other information required by the Department pursuant to any condition that the Department imposes on the right to conduct Utility-related Abatement Measures, pursuant to 310 CMR 40.0463(2); and
 - (fe) an LSP Opinion as to whether the Utility-related Abatement Measure is being conducted in conformance with the provisions of 310 CMR 40.0000 and any conditions established by the Department.
- (3) Status Reports shall not be required for any Utility- related Abatement Measure completed within 120 days following notification to the Department of the intention to conduct the same, pursuant to 310 CMR 40.0462(1)(b).
- (4) Utility-related Abatement Measure Status Reports shall be submitted to the Department using a transmittal form established by the Department for such purposes.
- (5) At disposal sites where Active Operation and Maintenance of a remedial program is being conducted, in addition to and/or in conjunction with the submittal of URAM Status Reports, a Remedial System Monitoring Report shall be submitted electronically to the Department on a form established by the Department for such purposes at the following frequency:
- (a) when a Utility-related Abatement Measure includes the operation of an Active Remedial System or the application of Remedial Additives, with the first URAM Status Report and every three months thereafter. In such cases where the operation of an Active Remedial System or application of Remedial Additives is

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not conducted until after the submittal of the first URAM Status Report, the Remedial System Monitoring Reports shall be submitted on the next 3-month anniversary of the submittal of the first URAM Status Report;
(b) when a Utility-related Abatement Measure includes conducting an Active Remedial Monitoring Program without the application of Remedial Additives, with the first URAM Status Report and annually thereafter. In such cases where the Active Remedial Monitoring Program is initiated after the submittal of the first URAM Status Report, the Remedial System Monitoring Report shall be submitted on the next 6-month anniversary of the submittal of the first URAM Status Report.

SUBPART H: COMPREHENSIVE RESPONSE ACTIONS

40.0800: Comprehensive Response Actions

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40.0890: ~~Phase V~~ Operation, Maintenance, and/or Monitoring

40.0891: ~~Phase V~~ General Provisions

40.0892: ~~Inspection~~ ~~Phase V Status~~ and Monitoring Reports

40.0893: Remedy Operation Status

40.0894: Phase V Completion Statement

40.0895: Public Involvement

40.0896: Possible Outcomes

40.0897: Post-Class C RAO Operation, Maintenance, and/or Monitoring

40.0890: ~~Phase V~~ Operation, Maintenance, and/or Monitoring

310 CMR 40.0891 through 40.0899, cited collectively as 310 CMR 40.0890, contain the requirements and procedures for conducting Phase V and Post-Class C RAO Operation, Maintenance and/or Monitoring activities at disposal sites.

40.0891: ~~Phase V~~ General Provisions

(1) The provisions of Phase V shall apply to disposal sites where Phase IV response actions have been completed, a Response Action Outcome has not yet been achieved, and operation, maintenance and/or monitoring of the Comprehensive Remedial Action is necessary to achieve a Response Action Outcome under 310 CMR 40.1000.

(2) Phase V activities may include the following:

- (a) operation and maintenance of the Comprehensive Remedial Action;
- (b) monitoring to evaluate the performance of the remedial systems and whether the Comprehensive Remedial Action is meeting its design specifications;
- (c) monitoring of conditions at the disposal site to evaluate the effectiveness of the Comprehensive Remedial Action in reducing, treating and/or containing oil and/or hazardous material;

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- (d) efforts to correct problems if performance monitoring indicates that the Comprehensive Remedial Action is not performing as designed; and/or
- (e) documentation and submission of the results of operation, maintenance and monitoring activities to the Department, as described in 310 CMR 40.0892.

(3) Operation, maintenance and/or monitoring activities shall follow the OMM plan developed as part of the Remedy Implementation Plan in Phase IV under 310 CMR 40.0874(3)(d). The OMM plan shall be revised and updated as warranted in response to changes in site conditions, modifications to remedial systems, or as otherwise necessary to ensure that the Comprehensive Remedial Action achieves design standards and remedial goals.

(4) ~~Inspection and monitoring~~ Operation, maintenance and/or monitoring activities results shall be documented and submitted to the Department ~~in report form as~~ described in 310 CMR 40.0892.

(5) Operation, maintenance and/or monitoring activities shall be performed at a frequency which is sufficient to ensure the effective performance and the integrity of the remedial action, consistent with the Response Action Performance Standard as described in 310 CMR 40.0191, and in conformance with the terms of applicable permits, approvals, ~~or licenses~~ or provisions in 310 CMR 40.0000. At a minimum, a Status Report as described in 310 CMR 40.0892 that documents information and data ~~on operation and maintenance and/or monitoring conducted gathered~~ pursuant to this section shall be ~~gathered and~~ submitted to the Department six months from the receipt by the Department of the original Remedy Implementation Plan and every six months thereafter for the duration of the operation of the remedy in a report as described in 310 CMR 40.0892. Each Status Report shall document activities occurring over the period of time since the previously submitted Status Report.

40.0892: ~~Inspection~~ Phase V Status and Monitoring Reports

(1) ~~Inspection Phase V Status and/or monitoring~~ reports shall include, without limitation, the following:

- ~~(1)(a)~~ (a) a description of the type and frequency of operation, maintenance inspection and/or monitoring activities conducted;
- ~~(2)(b)~~ (b) a description of any significant modifications of inspection the operation, maintenance and/or monitoring program made since the submission of the preceding Inspection and Monitoring Phase V Status Report;
- ~~(3)(c)~~ (c) an evaluation of the performance of the remedial action during the period of time since the last Status Report, including whether the remedial action is achieving remedial goals specified in the Phase IV Remedy Implementation Plan as described in 310 CMR 40.0874(3) and a description of any conditions or problems noted during the inspection and/or monitoring period ~~which that~~ are or may be affecting the performance of the remedial action;
- ~~(4)(d)~~ (d) a description of any measures taken to correct conditions which are affecting the performance of the remedial action; and
- ~~(5)~~ the results of sampling analyses and screening conducted as part of the monitoring and/or inspection program; and
- ~~(6)(e)~~ (e) the name, license number, signature and seal of the LSP.

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(2) At disposal sites where Active Operation and Maintenance of a remedial program is being conducted, in addition to and/or in conjunction with the submittal of Phase V Status Reports, a Remedial System Monitoring Report shall be submitted to the Department on a form established by the Department for such purposes at the following frequency:

(a) when Phase V activities include the operation of an Active Remedial System or the application of Remedial Additives to address conditions that do not pose an Imminent Hazard or Condition of Substantial Release Migration, with the first Phase V Status Report and every three months thereafter. In such cases where the operation of an Active Remedial System is not conducted until after the submittal of the first Phase V Status Report, the Remedial System Monitoring Report shall be submitted on the next 3-month anniversary of the submittal of the first Phase V;

(b) when Phase V activities include conducting an Active Remedial Monitoring Program without the application of Remedial Additives, with the first Phase V Status Report and annually thereafter. In such cases where the Active Remedial Monitoring Program is initiated after the submittal of the first Phase V Status Report, the Remedial System Monitoring Report shall be submitted on the next 6-month anniversary of the submittal of the first Phase V Status Report.

40.0897: Post-Class C RAO Operation, Maintenance and/or Monitoring

(1) 310 CMR 40.08976 shall apply to any disposal site where:

- (a) a Class C Response Action Outcome Statement for a Temporary Solution under 310 CMR 40.1000 has been submitted to the Department; and
- (b) the operation, maintenance and/or monitoring of the Comprehensive Remedial Action is necessary to ensure that the conditions upon which the Class C RAO is based are maintained and/or that further progress toward a Class A Response Action Outcome is made.

(2) Post-Class C RAO operation, maintenance and/or monitoring activities may include the following:

- (a) operation and maintenance of the Comprehensive Remedial Action;
- (b) monitoring to evaluate the performance of the remedial systems and whether the remedial action is meeting its design specifications;
- (c) monitoring of conditions at the disposal site to evaluate the effectiveness of the remedial action in reducing, treating and/or containing oil and/or hazardous material;
- (d) efforts to correct problems if performance monitoring indicates that the remedial action is not performing as designed;
- (e) monitoring to confirm the long-term effectiveness of the remedial action in maintaining the Class C Response Action Outcome pursuant to 310 CMR 40.1000; and
- (f) documentation and submission of the results of operation, maintenance and monitoring activities to the Department, as described in 310 CMR 40.0892.

(3) Post-Class C RAO operation, maintenance and/or monitoring activities shall be conducted in accordance with the applicable remedial action plan. Such plan shall

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be revised and updated as warranted in response to changes in site conditions, modifications to remedial systems, or as otherwise necessary to ensure that the remedial action achieves design standards and remedial goals. requirements set forth in 310 CMR 40.0891 (3) through (5) and 310 CMR 40.0892.

(4) Periodic Evaluation of Temporary Solutions shall be conducted pursuant to 310 CMR 40.0580.

(4) Operation, maintenance and/or monitoring activities shall be documented and submitted to the Department as described in 310 CMR 40.0898.

(5) Operation, maintenance and/or monitoring activities shall be performed at a frequency which is sufficient to ensure the effective performance and the integrity of the remedial action, consistent with the Response Action Performance Standard as described in 310 CMR 40.0191, and in conformance with the terms of applicable permits, approvals or licenses. At a minimum, a Status Report as described in 310 CMR 40.0898 that documents information and data gathered pursuant to this section shall be submitted to the Department six months from the receipt of by the Department of the original plan for Post-Class C RAO operation, maintenance and/or monitoring and every six months thereafter for the duration of the operation of the remedy. Each Status Report shall document activities occurring over the period of time since the previously submitted Status Report.

40.0898: Post-Class C RAO Status and Monitoring Reports

(1) Post-Class C RAO Status Reports shall include, without limitation, the following:

- (a) a description of the type and frequency of operation, maintenance and/or monitoring activities conducted;
- (b) a description of any significant modifications of the operation, maintenance and/or monitoring program made since the submission of the preceding Status Report;
- (c) an evaluation of the performance of the remedial action during the period of time since the last Status Report, including whether the remedial action is achieving remedial goals specified in the applicable remedial action plan and a description of any conditions or problems noted during the period that are or may be affecting the performance of the remedial action;
- (d) a description of any measures taken to correct conditions which are affecting the performance of the remedial action; and
- (e) the name, license number, signature and seal of the LSP.

(2) At disposal sites where Active Operation and Maintenance of a remedial program is being conducted, in addition to and/or in conjunction with the submittal of Post-Class C RAO Status Reports, a Remedial System Monitoring Report shall be submitted to the Department on a form established by the Department for such purposes at the following frequency:

- (a) when Post-Class C RAO activities include the operation of an Active Remedial System or the application of Remedial Additives to address conditions that do not pose an Imminent Hazard or Condition of Substantial Release Migration, with the first Post-Class C RAO Status Report and every three months thereafter. In such cases where the operation of an Active Remedial System is

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not conducted until after the submittal of the first Post-Class C RAO, the Remedial System Monitoring Report shall be submitted on the next 3-month anniversary of the submittal of the first Post-Class C RAO Status Report; (b) when Post-Class C RAO activities include conducting an Active Remedial Monitoring Program without the application of Remedial Additives, with the first Post-Class C RAO Status Report and annually thereafter. In such cases where the Active Remedial Monitoring Program is initiated after the submittal of the first Post-Class C RAO Status Report, the Remedial System Monitoring Report shall be submitted on the next 6-month anniversary of the submittal of the first Post-Class C RAO Status Report.

18. NOTE TO REVIEWERS: *DEP proposes to clarify at 310 CMR 40.0810 that when performing Comprehensive Response Actions, Completion Statements for each phase must be received in sequential order or concurrently. While it is common and acceptable practice for parties to conduct response actions that fall under the requirements of different phases simultaneously (e.g., conduct an initial review of feasible remedial alternatives in accordance with Phase III while completing the full Phase II investigation). Completion Statements, nonetheless, must be submitted to DEP in the order of the Phases.*

40.0810: General Provisions for Comprehensive Response Actions

(1) Comprehensive Response Actions shall be performed in sequential phases. The phases of Comprehensive Response Actions consist of:

- (a) Phase II - Comprehensive Site Assessment;
- (b) Phase III - Identification and Selection of Comprehensive Remedial Action Alternatives;
- (c) Phase IV - Implementation of the Selected Remedial Action Alternative; and
- (d) Phase V - Operation, Maintenance and/or Monitoring

(2) The results of each phase of Comprehensive Response Actions shall be documented in one or more reports, and submitted to the Department in a manner specified in 310 CMR 40.0800 and within the applicable deadlines specified in 310 CMR 40.0550 and 40.0560. Where appropriate, Comprehensive Response Action reports may be combined and submitted to the Department simultaneously.

(3) Each phase of Comprehensive Response Actions shall build upon the results of previous work, continuing until a Response Action Outcome as described in 310 CMR 40.1000 is reached for the disposal site. In no case shall a Completion Statement for a Phase be submitted to the Department until the Completion Statement for the previous Phase has been submitted.

19. NOTE TO REVIEWERS: *DEP proposes revisions at 310 CMR 40.0834(1) and (2) to eliminate the cross reference to subsection (3), which was deleted with the 6/27/03 revisions.*

40.0834: Phase II Scope of Work

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(1) Except as otherwise provided by the Department~~in 310 CMR 40.0834(3)~~, Department approval of the Phase II Scope of Work shall not be required.

(2) Except as otherwise specified by the Department~~under 310 CMR 40.0834(3)~~, the Phase II Scope of Work shall include:

- (a) the scope and nature of investigative and sampling programs that will be undertaken to characterize the source, extent, and migration pathways of oil and/or hazardous material, and the risk of harm posed to health, safety, public welfare or the environment;
- (b) the name and license number of the LSP engaged or employed by the person conducting the Comprehensive Response Action; and
- (c) a schedule for implementation of the Phase II - Comprehensive Site Assessment.

20. NOTE TO REVIEWERS: *DEP proposes to revise 40.0835 (4)(b) to clarify the content of a Phase II site map.*

40.0835: Phase II Report

...

(4) The information and assessment findings outlined in 310 CMR 40.0835(4) shall be provided in the Phase II Report. Depending upon specific site and release conditions, it may be necessary to provide additional information to adequately characterize the disposal site, consistent with the Response Action Performance Standard described in 310 CMR 40.0191, or it may be appropriate to forgo particular assessment or information gathering elements and provide Technical Justification as described in 310 CMR 40.0193.

- (a) Disposal Site Name, Location and Locus Map, updated, if necessary, from what was provided in the Phase I Report;
- (b) Detailed Disposal Site Map(s), updated, as necessary, from the base map(s) provided in the Phase I Report, and depicting all investigatory and sampling points relevant to the Comprehensive Site Assessment and the vertical and horizontal extent of contamination at the disposal site;

...

21. NOTE TO REVIEWERS: *DEP proposes the following revisions to 310 CMR 40.0881 and 310 CMR 40.0893 to clarify remedial actions that require active monitoring, such as those involving reactive walls or monitored natural attenuation, may file Remedy Operation Status in accordance with 310 CMR 40.0893. In order to facilitate this change, DEP is also proposing revisions to the definition of Active Operation and Maintenance in 310 CMR 40.0006 to incorporate sampling and analysis conducted as part of an active remedial monitoring program and proposing a new definition of Active Remedial System.*

See also the proposed revisions related to Remedial System Monitoring Reports (Notes to Reviewers #15 - 17) that reference Active Remedial System and Active Operation and Maintenance.

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40.0006: Terminology, Definitions and Acronyms

Active Remedial System means a remedial system that relies upon the continual or periodic use of an on-site or in-situ mechanical or electro-mechanical device.

Active Operation and Maintenance means ~~remedial activities related to: (a) operations which rely upon the continuing or periodic use of on-site or in-situ mechanical and/or electro-mechanical systems or devices, and~~ maintaining an Active Remedial System or (b) sampling and analyzing environmental media as part of an active remedial monitoring program (including but not limited to programs that employ Remedial Additives, reactive walls or natural attenuation). The term ~~excludes monitoring and landscaping and other activities that are not directly involved in operating, maintaining, or monitoring of the remedial program.~~

40.0881: Possible Outcomes

- (1) Upon completion of Phase IV activities the following outcomes are possible:

...

(b) a Response Action Outcome has not yet been achieved, and operation, maintenance and/or monitoring of the Comprehensive Remedial Action under Phase V (including Remedy Operation Status) is necessary to achieve a Response Action Outcome under 310 CMR 40.1000; or

(c) the requirements of a Class C Response Action Outcome under 310 CMR 40.1000 have been met, and Post-RAO operation, maintenance and/or monitoring of the remedial action under 310 CMR 40.0897⁶ is necessary to ensure that the conditions upon which the Class C RAO is based are maintained and/or that further progress toward a Permanent Solution is made.

...

40.0893: Remedy Operation Status

- (1) Applicability. Remedy Operation Status applies to disposal sites where a remedy is being conducted that is a system which relies upon Active Operation and Maintenance of a remedial system or program ~~is being conducted~~ operated for the purpose of achieving a Permanent Solution pursuant to 310 CMR 40.0890.

22. NOTE TO REVIEWERS: *DEP proposes to clarify at 40.0893(2) that Phase III and Phase IV Comprehensive Response Actions must be completed prior to achieving Remedy Operation Status.*

- (2) Performance Standard for Remedy Operation Status. To achieve and maintain Remedy Operation Status for a disposal site:

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(a) Phase III and Phase IV Comprehensive Response Actions as described in 310 CMR 40.0850 and 40.0870, respectively, must be completed;

(b) the remedial system shall be adequately designed in accordance with 310 CMR 40.0870 to achieve a Permanent Solution;

(c) the remedial system shall be operated and maintained in accordance with the requirements of 310 CMR 40.0890;

(d) each source of oil and/or hazardous material shall be eliminated or controlled in accordance with 310 CMR 40.1003(5);

(e) any substantial hazard shall be eliminated; and

(f) at a minimum, information and data on operation and maintenance ~~and/or~~ monitoring shall be gathered and submitted to the Department ~~every six months~~ in ~~the Status Report~~ and at the frequency as described in 310 CMR 40.0891(5) and 40.0892.

(3) Content of Submittal. Remedy Operation Status shall be effective upon submission of a completed Remedy Operation Status Submittal. A complete Submittal shall include:

(a) a completed transmittal form established by the Department for such purposes;

(b) a Remedy Operation Status Opinion prepared in accordance with 310 CMR 40.0015 that finds that each of the performance standards described in and 310 CMR 40.0893(2) are met; and

(c) the certification required by 310 CMR 40.0009.

(4) Effect of Remedy Operation Status. At any site with Remedy Operation Status, the deadline to achieve a Response Action Outcome within five years of the effective date of a Tier I ~~Permit~~ or initial Tier II Classification as described in 310 CMR 40.0550 and 40.0560, respectively, shall not apply; and a Tier I Permit or Tier II Classification or Extension thereof as described in 310 CMR 40.0700 and 40.0560, respectively, shall not be required provided the requirements of 310 CMR 40.0893 continue to be met.

23. NOTE TO REVIEWERS: *DEP proposes to add provisions allowing a new party to be added to the persons conducting response actions as a modification of the Remedy Operation Status. This change is meant to facilitate situations where a new owner or operator of a property or other party agrees to take on responsibility for maintaining Remedy Operation Status.*

(4) Modification of Remedy Operation Status. One or more persons may be added to those persons conducting response actions under Remedy Operation Status by submitting the following:

(a) a completed transmittal form established by the Department for such purposes;

(b) the written consent of the RP, PRP or Other Person(s) that submitted the Remedy Operation Status submittal;

(c) for each person to be added to those conducting response actions, a statement detailing that person's history of compliance with the Department's

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requirements, including, but not limited to, M.G.L. c. 21E, 310 CMR 40.0000 and other laws for the protection of health, safety, public welfare and the environment administered or enforced by the Department or other federal, state or local government agencies that are material to the disposal site; and
(d) the certification required by 310 CMR 40.0009 for each person to be added to those conducting response actions.

24. NOTE TO REVIEWERS: *DEP proposes to clarify that response actions after termination of Remedy Operation Status require a Tier Classification and provides for maintenance of Remedy Operation Status during monitoring of potential rebound of contaminant concentrations after system shut down.*

(56) Termination of Remedy Operation Status.

(a) Remedy Operation Status shall terminate if:

1. the person providing the Remedy Operation Status Opinion fails to meet the requirements of 310 CMR 40.0893(2). Mechanical failure of the system and/or the need to undertake substantial system modifications shall not terminate Remedy Operation Status if written notice is provided to the Department in accordance with 310 CMR 40.0893(56)(b); or
2. the person providing the Remedy Operation Status Opinion notifies the Department in accordance with 310 CMR 40.0893(56)(c) that such person intends to discontinue operation of the remedial system upon which the Status is based prior to achieving a Permanent Solution;

(b) Any person conducting response actions at a disposal site with Remedy Operation Status who obtains knowledge that the criteria in 310 CMR 40.0893(2) are no longer being met, including knowledge of a mechanical failure and/or need to substantially modify the remedial system, shall provide written notice to the Department in the form of a Status Report within 30 days of obtaining such knowledge. Notice shall include plans and a timetable to correct failures and/or to implement modifications of the remedial system. Remedy Operation Status shall terminate unless the remedial system is operating in accordance with 310 CMR 40.0893(2) within one-hundred twenty (120) days of providing such written notice or within an Interim Deadline established by the Department;

(c) Any person who intends to discontinue operation of the remedial system on which the Remedy Operation Status is based shall provide written notice to the Department. Remedy Operation Status shall terminate upon the Department's receipt of such notice; ~~and~~

(d) Notwithstanding 310CMR 40.0893(6)(c), any person who intends to discontinue operation of the remedial system on which the Remedy Operation Status is based in order to assess whether the remedial goals have been achieved and conditions remain stable over time may maintain Remedy Operation Status provided that he/she: notifies the Department of the system shut down and the plans for monitoring site conditions in the next required Status Report following system shut down; continues to submit Status Reports at the frequency required described in 310 CMR 40.0891(5) and 40.0892; and notifies the Department if operation of the system is resumed in the next required Status Report following resumed operation; and

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(d) Any person conducting response actions at a disposal site where Remedy Operation Status has been terminated pursuant to 310 CMR 40.0893(56)(a) shall have two years from the date of the termination to achieve a Response Action Outcome. Response actions after the termination of Remedy Operation Status shall not be conducted without a valid Tier I Permit or Tier II Classification or Extension thereof.

25. NOTE TO REVIEWERS: DEP proposes to amend incorrect cross-references in 40.0894 and 40.0896 below.

40.0894: Phase V Completion Statement

...

(2) The Phase V Completion Statement form shall include:

(a) an Opinion from a Licensed Site Professional:
that:

...

2. except where operation, maintenance and/or monitoring are continuing under 310 CMR 40.08976, ...; and

3. except where operation, maintenance and/or monitoring are continuing under 310 CMR 40.08976, ...

40.0896: Possible Outcomes

Upon completion of operation, maintenance and monitoring activities under Phase V the following outcomes are possible:

...

(3) the requirements of a Class C Response Action Outcome under 310 CMR 40.1000 have been met, a Class C Response Action Outcome Statement has been submitted to the Department, and additional Post-RAO Operation, Maintenance, and/or Monitoring of the remedial action alternative under 310 CMR 40.08976 is necessary to ensure that the conditions upon which the Class C RAO is based are maintained and/or that further progress toward a Class A RAO is made.

TEMPORARY SOLUTIONS

26. NOTE TO REVIEWERS: DEP proposes revisions in 40.1000 to create two subcategories of Class C RAO, Temporary Solutions. M.G.L. C. 21E provides for the achievement of a Temporary Solution (documented in the MCP as a Class C Response Action Outcome) in those cases where No Substantial Hazard remains and either no feasible remedial alternative currently exists for the achievement of a Permanent Solution or the implementation of a Temporary Solution is more “cost-effective and timely” than the achievement of a Permanent Solution.

The MCP currently does not provide for distinguishing between those instances where parties submit Class C RAOs because no feasible Permanent Solution exists for the disposal site and those where a Class C RAO is submitted to mark the achievement of a condition of No Substantial Hazard, but response actions are continuing toward a Permanent Solution. Distinguishing between the two types of Temporary

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Solutions will enable DEP to focus its review of and enforcement related to post Class C RAO response actions more effectively. The proposal retains the 5-year Periodic Review of "Class C-1" RAOs, where it is infeasible to achieve a Permanent Solution, and clarifies that where a Permanent Solution is feasible, response actions after a Class C RAO to implement a Permanent Solution must be conducted under a Tier I Permit, Tier II Classification or Extension thereof.

The Periodic Review Evaluation provisions have been deleted and relocated to 40.1050, the Class C RAO provisions.

The proposed revision at 40.1050(1) specifies that the achievement of a Class C RAO requires the identification and elimination or mitigation of sources of oil or hazardous materials, to the extent feasible.

40.0580: Periodic Evaluation of Temporary Solutions at Tier I and Tier II Disposal Sites

~~(1) At any Tier I or Tier II disposal site where a Temporary Solution has been implemented and a Class C RAO Statement or a Waiver Completion Statement indicating that a Temporary Solution has been achieved has been submitted to the Department, the RP, PRP or Other Person shall undertake a periodic evaluation of the Temporary Solution and shall submit to the Department an LSP Periodic Review Opinion evaluating the status of the Temporary Solution not less than every fifth year after the date of filing of such Class C Response Action Outcome Statement or Waiver Completion Statement.~~

~~(2) If a Class C Response Action Outcome Statement or Waiver Completion Statement indicating that a Temporary Solution has been achieved has been filed with the Department for a disposal site, neither a Permit Extension nor a Tier II Classification Extension shall be required solely to perform a periodic evaluation of the Temporary Solution at such disposal site, unless otherwise required by the Department.~~

~~(3) Content of a Periodic Review Opinion for a Temporary Solution Evaluation. The LSP Periodic Review Opinion required by 310 CMR 40.0580(1) shall address the following:~~

- ~~(a) the effectiveness of the Temporary Solution(s);~~
- ~~(b) any changes in activities, uses and/or exposures that may cause an actual or potential increase in exposure for human or environmental receptors to oil and/or hazardous material;~~
- ~~(c) if applicable, an evaluation of an Activity and Use Limitation pursuant to 310 CMR 40.1080;~~
- ~~(d) any necessary and required response actions to maintain the Temporary Solution and, if applicable, the Activity and Use Limitation, in the event that the Temporary Solution and/or the Activity and Use Limitation is no longer maintaining No Significant Risk for the disposal site; such response actions shall be initiated pursuant to 310 CMR 40.0581 or 40.0582, whichever is applicable;~~
- ~~(e) the feasibility of implementing one or more Permanent Solutions for the disposal site pursuant to 310 CMR 40.0861(2)(h); and~~
- ~~(f) the certification required in 310 CMR 40.0009.~~

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40.1030: Categories of Response Action Outcomes

- (1) Response Action Outcomes are categorized under 310 CMR 40.1030 through 40.10519 as A-1, A-2, A-3, A-4, B-1, B-2, B-3, ~~or C-1, or C-2~~.
- (2) The specific category of Response Action Outcome applicable to a site or disposal site shall be established based upon the following factors:
 - (a) whether the site or disposal site poses No Significant Risk;
 - (b) whether all ~~s~~Substantial ~~h~~Hazards posed by the disposal site have been eliminated;
 - (c) whether remedial actions have been taken to achieve a level of No Significant Risk;
 - (d) whether one or more Activity and Use Limitations are required under the provisions of 310 CMR 40.1012 to maintain a level of No Significant Risk;
 - (e) whether concentrations of oil and/or hazardous material at a site exceed Upper Concentration Limits in Soil and Groundwater listed at 310 CMR 40.0996(7); and
 - (f) whether remedial actions have achieved background, as described in 310 CMR 40.0900 and 310 CMR 40.1020.

40.1050: Class C Response Action Outcomes: Temporary Solutions

- (1) Class C Response Action Outcomes shall apply to disposal sites where a Temporary Solution has been achieved. A Temporary Solution shall ensure:
 - (a) the elimination of any ~~s~~Substantial ~~h~~Hazard at the disposal site; and
 - (b) the identification, characterization and, to the extent feasible, the elimination, control or mitigation of any source of oil and/or hazardous material, either as a consequence of a direct discharge or through intermedia transfer.
- (2) Class C Response Action Outcomes shall apply, without limitation, to the following types of disposal sites:
 - (a) disposal sites where Upper Concentration Limits as applicable pursuant to 310 CMR 40.0996 are exceeded in soil and/or groundwater, but all substantial hazards have been eliminated; and/or
 - (b) disposal sites where oil and/or hazardous material concentrations exceed any applicable or suitably analogous standard identified pursuant to 310 CMR 40.0993(3), but such concentrations of oil and/or hazardous material do not pose a substantial hazard.
- (3) Class C Response Action Outcomes may be achieved regardless of whether one or more remedial actions have been taken at a disposal site, but only after a Downgradient Property Status Submittal has been provided to the Department in accordance with 310 CMR 40.0180 or ~~completion of~~ a Phase II Comprehensive Site Assessment and a Phase III evaluation of Comprehensive Remedial Action

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alternatives, as specified in 310 CMR 40.0830 and 310 CMR 40.0850, respectively, have been completed.

- (4) A Class C Response Action Outcome may be reached:
- (a) after completion of a Phase III evaluation pursuant to 310 CMR 40.0850;
 - (b) after implementation of a Phase IV comprehensive remedial action pursuant to 310 CMR 40.0870; or
 - (c) after Phase V operation, maintenance and/or monitoring pursuant to 310 CMR 40.0890;

~~(5) For all Class C Response Action Outcomes, except those achieved after a Downgradient Property Status Submittal has been provided to the Department in accordance with 310 CMR 40.0180:~~

- ~~(a) a copy of the plan as specified in 310 CMR 40.0861(2)(h) which presents definitive and enterprising steps to be taken toward achieving a Permanent Solution at the disposal site or portion of a disposal site shall be submitted with the Class C Response Action Outcome Statement; and~~
- ~~(b) a Periodic Evaluation of the Temporary Solution described in 310 CMR 40.0580 shall be conducted not less than every fifth year after the date of filing the Class C RAO, until such time that a Class A or Class B Response Action Outcome Statement is submitted.~~

40.1051: Categories of Class C Response Action Outcomes

(1) Class C-1 Response Action Outcomes shall apply to disposal sites where, after completion of a Phase III evaluation pursuant to 310 CMR 40.0850, a condition of No Substantial Hazard exists, and it is concluded that ~~response actions to achieve a Permanent Solution are not currently feasible.~~

(2) Class C-2 Response Action Outcomes shall apply to disposal sites where, after completion of a Phase III evaluation pursuant to 310 CMR 40.0850, a condition of No Substantial Hazard exists, ~~response actions to achieve a Permanent Solution are feasible and are to be conducted.~~

(3) For all Class C-1 Response Action Outcomes where a Permanent Solution is not currently feasible, except those achieved after a Downgradient Property Status Submittal has been provided to the Department in accordance with 310 CMR 40.0180:

- (a) a copy of the plan as specified in 310 CMR 40.0861(2)(h) that presents definitive and enterprising steps to be taken toward achieving a Permanent Solution at the disposal site or portion of a disposal site shall be submitted with the Class C Response Action Outcome Statement; and
- (b) a Periodic Review of the Temporary Solution shall be conducted every fifth year after the date of filing the Class C RAO, until such time that a Class A, Class B or Class C-2 Response Action Outcome Statement is submitted. Such Periodic Review Opinion shall address the following:

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1. the feasibility of implementing one or more Permanent Solutions for the disposal site pursuant to 310 CMR 40.0861(2)(h) at the time of the periodic evaluation;
2. the effectiveness of the Temporary Solution(s);
3. the definitive and/or enterprising steps taken to identify, develop and implement a permanent feasible solution at the site;
4. any changes in activities, uses and/or exposures that may cause an actual or potential increase in exposure for human or environmental receptors to oil and/or hazardous material;
5. if applicable, an evaluation of an Activity and Use Limitation pursuant to 310 CMR 40.1080;
6. any necessary and required response actions to maintain the Temporary Solution and, if applicable, any Activity and Use Limitation, in the event that the Temporary Solution and/or the Activity and Use Limitation is no longer effective in maintaining a condition of No Substantial Hazard at the disposal site; such response actions shall be initiated pursuant to 310 CMR 40.1067; and
7. the certification required in 310 CMR 40.0009.

(4) For all Class C-2 Response Action Outcomes where a Permanent Solution is feasible, but a Temporary Solution has been implemented because it is more cost-effective or timely:

(a) a copy of the plan as specified in 310 CMR 40.0861(2)(h) that presents definitive and enterprising steps to be taken toward achieving a Permanent Solution at the disposal site or portion of a disposal site shall be submitted with the Class C Response Action Outcome Statement; and

(b) further response actions shall be conducted at the disposal site under a valid Tier I Permit or Tier II Classification, whichever is applicable, or an Extension thereof.

40.1056: Content of Response Action Outcome Statements

(1) A Response Action Outcome Statement shall be submitted by a RP, PRP or Other Person on a form established by the Department for such purposes, and shall include, at a minimum, the following:

- (a) the site or disposal site name, address and DEP Release Tracking Number(s);
- (b) the class of Response Action Outcome;
- (c) for all RAOs other than RAOs where the concentrations of oil and hazardous material are consistent with or have been reduced to background or where a threat of release has been abated, the Method(s) (Methods 1, 2 or 3) used to characterize the risk of harm posed by the disposal site to health, public welfare and the environment, pursuant to 310 CMR 40.0900;
- (d) the relationship of the Response Action Outcome Statement to any other Response Action Outcome Statements that have been filed for the disposal site,

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if applicable, together with a statement as to whether any additional response actions are needed for any other portions of the disposal site;

(e) where the RAO Statement applies to a Class C RAO, indication as to whether [a feasible Permanent Solution exists for the disposal site and whether any Post-RAO Active Operation and Maintenance and/or Monitoring](#) of the remedial action under 310 CMR 40.08967 will be conducted;

(f) indication as to whether the RAO is based upon the implementation of an Activity and Use Limitation, and if so, the type of Activity and Use Limitation implemented at the disposal site. In such cases, an Activity and Use Limitation Opinion accompanied by an Activity and Use Limitation Opinion form prescribed by the Department shall be appended to the RAO Statement pursuant to 310 CMR 40.1056(2)(g);

(g) except where specifically exempted by the Department based upon the Department's level of involvement in the oversight of response actions at the site or disposal site, an Opinion from a Licensed Site Professional as to whether the requirements of the applicable class of Response Action Outcome specified in 310 CMR 40.1000 have been met;

(h) a certification of the Response Action Outcome Statement and all documents submitted with the RAO Statement as required by 310 CMR 40.0009; and

(i) indication as to whether oil and/or hazardous material exceed one or more applicable Upper Concentration Limits in Soil or Groundwater, as described at 310 CMR 40.0996.

40.0860: Feasibility Evaluations

(1) The criteria described in 310 CMR 40.0860 apply to:

(a) evaluating the feasibility of implementing a Permanent Solution;

(b) evaluating the feasibility of reducing the concentrations of oil and hazardous material in the environment to levels that achieve or approach background; and

(c) evaluating the feasibility of reducing the concentrations of oil and hazardous material in soil at a disposal site to levels at or below applicable soil Upper Concentrations Limits.

(2) An evaluation of the feasibility of implementing a Permanent Solution shall be performed in all cases where the selected Comprehensive Remedial Action alternative is a Temporary Solution ~~and it can not be demonstrated through a detailed evaluation using the criteria described in 310 CMR 40.0858 that the implementation of a Temporary Solution is a more cost-effective and timely remedial alternative than the implementation of a feasible Permanent Solution.~~

...

40.0861: Remedial Action Plan

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(1) The results of a Phase III evaluation shall be documented in a Remedial Action Plan. The Remedial Action Plan shall support the selection of a remedial action alternative by providing information of sufficient detail on the process by which the recommended remedial action alternative was developed and evaluated.

(2) A Remedial Action Plan shall contain:

(a) a description of all remedial action alternatives initially identified and the results of the initial screening;

(b) where a detailed evaluation is required, a discussion of how the alternatives remaining after initial screening compared with respect to each of the detailed criteria described in 310 CMR 40.0858, and how the criteria were weighted in the evaluation;

(c) justification for the selection of the proposed remedial action alternative with respect to its anticipated effectiveness and relative to all other evaluated alternatives, including discussion of the results of any bench-scale tests or pilot studies performed as part of an evaluation of the effectiveness of an alternative;

(d) ~~where required,~~ the results of the evaluation under 310 CMR 40.0860 of whether the implementation of a Permanent or Temporary Solution is feasible;

(e) if a Permanent Solution is selected as the remedial action alternative, a discussion of how the alternative is likely to achieve a level of No Significant Risk;

(f) if a Temporary Solution is selected as the remedial action alternative, a discussion of how the alternative is likely to eliminate any substantial hazards posed by the disposal site until a Permanent Solution is implemented;

(g) if a Permanent Solution is selected, the results of the evaluation under 310 CMR 40.0860 of the feasibility of reducing the concentrations of oil and hazardous material in the environment at the disposal site to levels that achieve or approach background, unless the Remedial Action Plan otherwise includes a demonstration that the selected alternative is designed to achieve background and a Class A-1 Response Action Outcome;

(h) if the selected remedial action alternative is a Temporary Solution, a detailed description of definitive and enterprising steps pursuant to 310 CMR ~~40.0580~~1051 to identify and develop an alternative that is a likely Permanent Solution and a schedule for the implementation of such steps. Such steps may include:

1. performing pilot tests or bench-scale studies;

2. investigating innovative ways to reduce the costs or the risks of implementing a specific alternative; and

3. developing new technologies; and

(i) a projected schedule for implementation of Phase IV activities pursuant to 310 CMR 40.0870.

27. NOTE TO REVIEWERS: *The addition at 40.0860(1)(d) adds the evaluation of measures to eliminate, prevent or mitigate Critical Exposure Pathways to the list of feasibility evaluations that employ the criteria in 310 CMR 40.0860. The Critical Exposure Pathway provisions at 310 CMR 40.0427(1)(c) currently reference 40.0860. The proposed change is a clarification, intended to complete the cross-reference.*

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40.0860: Feasibility Evaluations

- (1) The criteria described in 310 CMR 40.0860 apply to:
- (a) evaluating the feasibility of implementing a Permanent Solution;
 - (b) evaluating the feasibility of reducing the concentrations of oil and hazardous material in the environment to levels that achieve or approach background; ~~and~~
 - (c) evaluating the feasibility of reducing the concentrations of oil and hazardous material in soil at a disposal site to levels at or below applicable soil Upper Concentrations Limits; ~~and~~
 - (d) evaluating the feasibility of eliminating, preventing or mitigating Critical Exposure Pathway(s).

28. NOTE TO REVIEWERS: *DEP proposes to amend the requirements for conducting Response Actions after an RAO by replacing 310 CMR 40.0581 and 310 CMR 40.0582 with a new section 310 CMR 40.1067. The current regulations for conducting Response Actions after an RAO has been achieved for a site are not comprehensive, and have generated some confusion. The revisions are intended to clarify and streamline the existing requirements. The proposed revisions do not remove the obligation of the person conducting the remedial actions to comply with the notification provisions of the MCP, if a new notification condition is identified during the post-RAO response action. Discovery of a new notification condition may require the cessation of a post-RAO response action, until the appropriate notification is made pursuant to 310 CMR 40.0300, and DEP authorization is obtained to continue the response action.*

The proposal would leave largely unchanged the existing requirements for response actions at sites with Class C RAOs. Work outside of AUL areas at Class A and B RAO sites would be allowed to go forward without any special requirements. Work within AUL areas would be conducted either as a RAM or as an LRA-type response action, depending on the types and volumes of contaminated media addressed in the response action. Remedial actions at Class A-4 or B-3 that affect or are in the area in which an Engineered Barrier is located would be conducted as Comprehensive Response Actions pursuant to 310 CMR 40.0800.

If the property use remains consistent with the AUL then a revised RAO may be submitted at the discretion of the person conducting response actions. If the property use is not consistent with the AUL, then the existing AUL must be amended or terminated and a new RAO must be submitted in accordance with 40.1080. If a revised or new RAO is submitted then the risk assessment provisions of 310 CMR 40.0900 in effect at the time of submittal of the revised or new RAO would apply. Otherwise the standards applicable at the time of the original RAO apply. In addition, the provisions of this section do not affect the continuing duty to comply with 310 CMR 40.0370, if applicable.

Public Participation Requirements - *DEP seeks comments on the public involvement activities that should apply to Post-RAO remedial actions. Under the current proposal, work conducted outside areas with AULs is not subject to any additional requirements under the MCP, including requirements for public involvement. Work conducted within the area of an AUL would be subject to the public involvement provisions that now apply for preliminary response actions under 310 CMR 40.0400, including the proposed revisions at 310 CMR 40.1403(9). In addition, sites where the remedial action is subject to tier classification as described in section 310 CMR 40.0500, would be subject to PIP Plan Site Designation pursuant to 310 CMR 40.1404.*

40.1067: Response Actions after a Response Action Outcome has been submitted to the Department

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(1) 310 CMR 40.1067 applies to response actions performed after a Response Action Outcome Statement or a Waiver Completion Statement has been submitted to the Department.

(2) Nothing in 310 CMR 40.1067 shall limit the Department's authority to establish site-specific requirements for response actions to address a violation(s) or deficiency(ies) or affect any person's duty to notify the Department of a release(s) or threat of release(s) in accordance with M.G.L. c. 21E and 310 CMR 40.0000.

(3) For remedial actions conducted after a Class A-1, Class A-2 or Class B-1 Response Action Outcome Statement has been submitted to the Department:

(b) a Tier I Permit, Tier II Classification or Extension thereof is not required;

(c) unless otherwise specified by the Department, documentation, including a revised Response Action Outcome Statement, is not required to be maintained or submitted to the Department, but may be maintained or submitted voluntarily;

(d) a revised Response Action Outcome Statement, whenever submitted to the Department, may be limited to the area in which the response actions were conducted; and

(e) annual compliance assurance fees shall not be assessed.

(4) Remedial actions conducted within an area subject to an Activity and Use Limitation after the submittal of a Class A-3 or B-2 Response Action Outcome Statement to the Department are subject to the following requirements:

a) Limited soil excavation activities may be undertaken without the need to notify the Department, provided:

1. such soil excavation activities are not prohibited by the Activity and Use Limitation;

2. such soil excavation activities do not result in the excavation of more than 100 cubic yards of Remediation Waste contaminated solely by oil or waste oil, or 20 cubic yards of Remediation Waste contaminated by hazardous material or mixture of oil or waste oil and hazardous material; and

3. all excavated Remediation Waste is managed in accordance with the provisions of 310 CMR 40.0030;

b) Remedial activities which exceed the scope of the limited soil excavation activities outlined in 40.1067(4)(a), or are being conducted to allow a change in Site Activities and Uses pursuant to 310 CMR 40.1080, shall be conducted as Release Abatement Measures, provided:

1. such remedial activities are not prohibited by the Activity and Use Limitation; and

2. such remedial activities are conducted in accordance with the requirements set forth in 310 CMR 40.0440, including requirements at 40.0442 which limit the scope of Release Abatement Measures, all requirements for submittal of Plans, Status Reports, and Completion Statements, and all requirements for public involvement activities.

c) Remedial activities which exceed the scope of a Release Abatement Measure shall be conducted as a Phase IV Comprehensive Remedial Response Action, as specified at 310 CMR 40.870, provided:

1. Such remedial activities are not prohibited by the Activity and Use Limitation; and

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2. Such remedial activities are conducted under a valid Tier I permit or Tier II Classification or extension thereof.

(d) A revised Response Action Outcome shall be submitted upon completion response actions when the terms and conditions of an Activity and Use Limitation are changed through an amendment, termination or partial termination in accordance with 310 CMR 40.1080. A revised Response Action Outcome Statement, whenever submitted, may be limited to the area in which the response actions were conducted.

(5) Remedial actions conducted after a Class A-4 or B-3 Response Action Outcome Statement has been submitted to the Department that are in or affect the area where an Engineered Barrier is located shall be conducted in accordance with 310 CMR 40.0800. In such cases, the person conducting the response action shall have a valid Tier I Permit or Tier II Classification, or an Extension thereof. Where such remedial actions are outside of and do not affect the area where an Engineered Barrier is located, the procedures at 310 CMR 40.1067(4) shall apply.

(6) Response actions conducted after a Class C Response Action Outcome Statement has been submitted to the Department are subject to the following requirements:

(a) response actions that are conducted to achieve a Class A or B Response Action Outcome or to maintain the Temporary Solution after a Periodic Evaluation pursuant to 310 CMR 40.1051, other than those response actions conducted in accordance with 310 CMR 40.0897:

1. shall be conducted in accordance with 310 CMR 40.0800;
2. shall be conducted under a valid Tier I Permit or Tier II Classification or an Extension thereof;
3. shall require the submission of a revised RAO Statement upon completion of response actions if such response actions achieve either a Class A or B RAO; and
4. shall result in the assessment of applicable annual compliance assurance fees for each billable year that the response actions are conducted.

(7) The Department may specify in a Notice of Audit Findings that remedial actions are necessary at a disposal site after a Class A or B Response Action Outcome Statement has been submitted to the Department pursuant to 310 CMR 40.1067. Notwithstanding the provisions of 310 CMR 40.1067 to the contrary, all remedial actions conducted in response a Notice of Audit Findings pursuant to 310 CMR 40.1067 shall be documented in the Post-Audit Completion Statement as described at 310 CMR 40.1170.

40.0441: General Provisions for Release Abatement Measures

(1) Release Abatement Measures are intended to reduce risks at a disposal site and/or increase the cost effectiveness of response actions by allowing the implementation of certain accelerated remedial actions to stabilize, treat, control, minimize or eliminate releases until such time as a Response Action Outcome is achieved, as described in 310 CMR 40.1000, or until Comprehensive Remedial Actions can be implemented, as described in 310 CMR 40.0800. Release Abatement Measures may also be used to perform an additional remedial action(s) at a site for which a Response Action Outcome Statement has been submitted, in accordance with 310 CMR 40.1067.

...

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40.0444: Release Abatement Measure Plans

...

(2) All Release Abatement Measure Plans submitted to the Department prior to Tier Classification of the disposal site shall be accompanied by the appropriate fee established in 310 CMR 4.00. No fee is required for Release Abatement Measure Plans submitted to the Department:

- (a) after Tier Classification of the disposal site or after submittal of a Class A or B Response Action Outcome Statement for the disposal site;

...

40.0445: ~~Release Abatement Measure Status and Monitoring Reports on Release Abatement Measures~~

...

(3) Status Reports shall not be required for sites where a Release Abatement Measure Completion Report or a Response Action Outcome Statement is received by the Department prior to the date on which the first Status Report is required pursuant to 310 CMR 40.0445(1). In the case of a Release Abatement Measure conducted at a site already subject to a Response Action Outcome Statement in accordance with 310 CMR 40.1067, a Release Abatement Measure Status Report shall be required unless a Release Abatement Measure Completion Report or a revised Response Action Outcome Statement is received by the Department prior to the date on which the first Status Report is required pursuant to 310 CMR 40.0445(1).

40.0446: Release Abatement Measure Completion Reports

...

(3) A Release Abatement Measure Completion Report shall not be required for sites where a Response Action Outcome Statement, as described in 310 CMR 40.1000, is submitted to the Department within 120 days following receipt by the Department of the initial Release Abatement Measure Plan of obtaining oral, written, or presumed approval from the Department to conduct the Release Abatement Measure, whichever occurred sooner, or in the case of a Release Abatement Measure conducted at a site already subject to a Response Action Outcome Statement in accordance with 310 CMR 40.1067, unless a revised Response Action Outcome Statement is submitted.

40.1080: Changes in Property Uses/Activities Or Other Site Conditions After an RAO Has Been Filed

...

(2) Procedures for Additional Response Actions: Additional response actions required to maintain a level of No Significant Risk or to eliminate a substantial hazard, for the contemplated changes in Site Activities and/or Uses shall be completed before the new or altered activities commence in accordance with the following:

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(a) any additional response actions shall be conducted pursuant to ~~the provisions of the Massachusetts Contingency Plan, 310 CMR 40.0000~~310 CMR 40.1067;

...

~~40.0581: Conducting Response Actions at a Tier I Disposal Site After a Response Action Outcome has been Submitted to the Department~~

~~(1) Each person who intends to conduct any of the response actions listed below shall either conduct such response actions in accordance with an effective Tier I Permit or obtain a Permit Extension from the Department in accordance with 310 CMR 40.0703 and 40.0706:~~

~~(a) implement a Permanent Solution at a Tier I disposal site after a Class C Response Action Outcome Statement has been submitted to the Department;~~

~~(b) implement response actions pursuant to 310 CMR 40.1080 at a disposal site where an Activity and Use Limitation is in place in order to maintain No Significant Risk;~~

~~(c) conduct further response actions at a disposal site where an Activity and Use Limitation is in place in order to withdraw such Limitation in order to allow certain site uses or activities which are prohibited pursuant to the existing Activity and Use Limitation; or~~

~~(d) implement response actions after a Periodic Evaluation conducted pursuant to 310 CMR 40.0580(1) reveals that more substantial response actions are required to maintain the Temporary Solution at such disposal site other than those that may be conducted for normal maintenance of the Class C RAO pursuant to a post Class C RAO Operation, Maintenance and/or Monitoring Plan pursuant to 310 CMR 40.0896.~~

~~(2) Each person who intends to conduct response actions pursuant to 310 CMR 40.0581(1) in accordance with an effective Tier I Permit shall notify the Department in writing of such intent prior to implementing such actions.~~

~~(3) Each person who intends to conduct response actions pursuant to 310 CMR 40.0581(1) shall submit with the Tier I Permit Extension required by 310 CMR 40.0581(1) or the notice described in 310 CMR 40.0581(2), whichever is applicable, those reports, plans and proposed schedules required for such response actions pursuant to 310 CMR 40.0581(1).~~

~~(4) The Department will assess the applicable annual compliance assurance fee in accordance with 310 CMR 4.00 upon approval of any Tier I Permit Extension required by 310 CMR 40.0581(1) or upon receipt of the notice required by 310 CMR 40.0581(2), whichever is applicable.~~

~~40.0582: Conducting Response Actions at a Tier II Disposal Site after a Response Action Outcome has been Submitted to the Department~~

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~~(1) A person who intends to conduct any of the response actions listed below shall either conduct such response actions in accordance with an effective Tier II Classification or obtain a Tier II Classification Extension pursuant to 310 CMR 40.0560(7):~~

- ~~(a) implement a Permanent Solution at a Tier II disposal site after a Class C Response Action Outcome Statement has been submitted to the Department;~~
- ~~(b) implement response actions pursuant to 310 CMR 40.1080 at a disposal site where an Activity and Use Limitation is in place in order to maintain No Significant Risk;~~
- ~~(c) conduct further response actions at a disposal site where an Activity and Use Limitation is in place in order to withdraw such Limitation in order to allow certain site uses or activities which are prohibited pursuant to the existing Activity and Use Limitation; or~~
- ~~(d) implement response actions after a Periodic Evaluation conducted pursuant to 310 CMR 40.0582(1) reveals that more substantial response actions are required to maintain the Temporary Solution at such disposal site other than those that may be conducted for normal maintenance of the Class C RAO pursuant to a post Class C RAO Operation, Maintenance and/or Monitoring Plan pursuant to 310 CMR 40.0896.~~

~~(2) Each person who intends to conduct response actions pursuant to 310 CMR 40.0582(1) and who is not the person who submitted the applicable RAO for the disposal site shall comply with the provisions of 310 CMR 40.0560(8) prior to implementing such response actions.~~

~~(3) Each person who intends to conduct response actions pursuant to 310 CMR 40.0582(1) in accordance with an effective Tier II Classification shall notify the Department in writing of such intent prior to implementing such actions.~~

~~(4) Each person who intends to conduct response actions pursuant to 310 CMR 40.0582(1) shall submit with the Tier II Extension Submittal required by 310 CMR 40.0582(1) or the notice described in 310 CMR 40.0582(3), whichever is applicable, those reports, plans and proposed schedules required for such response actions pursuant to 310 CMR 40.0582(1).~~

~~(5) The Department will assess Tier II annual compliance assurance fees in accordance with 310 CMR 4.00 upon receipt of any Tier II Extension Submittal required by 310 CMR 40.0582(1) or upon receipt of the notice required by 310 CMR 40.0582(3), whichever is applicable.~~

NUMERICAL RANKING SYSTEM

29. NOTE TO REVIEWERS: *In the Numerical Ranking System (NRS, 310 CMR 40.1511) there are two points at which the toxicity (human health & ecological) of chemicals present at the site is considered. In Section III.A., the "OHM Toxicity Score" is determined, and in Section V.B., the "Environmental Toxicity Score" is determined. In both cases, the regulations include "cheat sheets" which list the Score for common chemicals at specified concentrations (Table III.A. and Table V.B., for human health and*

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ecological scores, respectively). For chemicals not listed on the “cheat sheets”, the LSP may develop toxicity scores based on matrices (40.1513(3)(a) and 40.1516(3)) and tables of chemical-specific toxicity information (40.1513(2) and 40.1516(1)).

Since the regulations were first promulgated in 1993, the toxicity tables have not been systematically updated. The tables that follow update the “cheat sheets” and chemical-specific toxicity information used in the NRS. The human health toxicity information is based primarily on values developed by the U.S. Environmental Protection Agency (EPA) and published in the EPA’s “Integrated Risk Information System” (IRIS, <http://www.epa.gov/iriswebp/iris/index.html>). The ecological toxicity information is based on data collected by MA DEP as part of the revisions to the MCP GW-3 standards (detailed elsewhere in this package). No changes are proposed to the scoring matrices, which relate toxicity and concentration to derive a Score.

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40.1513(2) Human Health-Based Toxicity Values and Scores							
Chemical Name	CAS Number	Chronic Oral RfD mg/kg/day	Oral Carcin Slope Factor 1/(mg/kg/day)	CLS	Inhalation Carcin Slope Factor 1/(mg/kg/day)	CLS	Human Health Toxicity Value
Acenaphthene	83329	6.0E-02					8
Acenaphthylene	208968			D		D	25
Acephate	30560191	4.0E-03	8.7E-03	C			30
Acetaldehyde	75070					B2	28
Acetone	67641	1.0E-01		D		D	8
Acetone Cyanohydrin	75865	8.0E-04					40
Acetonitrile	75058	6.0E-03		D		D	25
Acetophenone	98862	1.0E-01		D		D	8
Acetyl Chloride	75365			D		D	25
Acifluorfen, sodium	62476599	1.3E-02					18
Acrolein	107028	2.0E-02		C		C	25
Acrylamide	79061	2.0E-04	4.5E+00	B2	4.5E+00	B2	46
Acrylic acid	79107	5.0E-01					4
Acrylonitrile	107131	1.0E-03	5.4E-01	B1	2.4E-01	B1	34
Alachlor	15972608	1.0E-02	8.0E-02	B2		B2	25
Aldicarb	116063	1.0E-03		D		D	25
Aldicarb sulfone	1646884	1.0E-03					25
Aldrin	309002	3.0E-05	1.7E+01	B2	1.7E+01	B2	50
Alkanes/Alkenes							25
Allyl Alcohol	107186	5.0E-03					25
Allyl Chloride	107051	5.0E-02		C		C	22
Aluminum phosphide	20859738	4.0E-04					40
Ametryn	834128	9.0E-03					18
Aminophenol, m-	591275	7.0E-02					8
Aminopyridine, 4-	504245	2.0E-05		D		D	40
Ammonia	7664417						25
Ammonium Acetate	631618			D		D	25
Ammonium Methacrylate	16325476			D		D	25
Aniline	62533		5.7E-03	B2		B2	22
Anthracene	120127	3.0E-01		D		D	4
Antimony	7440360	4.0E-04					40
Antimony Pentoxide	1314609	5.0E-04					40
Antimony Potassium Tartrate	28300745	9.0E-04					40
Antimony Tetroxide	1332816	4.0E-04					40
Antimony Trioxide	1309644	4.0E-04					40
Apollo	74115245	1.3E-02		C		C	25
Aramite	140578	5.0E-02	2.5E-02	B2	2.5E-02	B2	20
Aroclor 1016	12674112	7.0E-05					40
Aroclor 1254	11097691	2.0E-05					40
Aliphatics C5-C8		6.00E-02					8
C9-C12		1.00E-01					8
C9-C18		1.00E-01					8
C19-C36		2.00E+00					4

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Chemical Name	CAS Number	Chronic Oral RfD mg/kg/day	Oral Carcin Slope Factor 1/(mg/kg/day)	CLS	Inhalation Carcin Slope Factor 1/(mg/kg/day)	CLS	Human Health Toxicity Value
Arsenic	7440382	3.0E-04	1.5E+00	A	5.0E+01	A	46
Aromatics C9-C10		3.0E-02					18
C11-C22		3.0E-02					18
Asbestos	1332214			A		A	34
Assure	76578148	9.0E-03		D		D	18
Atrazine	1912249	3.5E-02	2.2E-01	C		C	28
Azobenzene	103333		1.1E-01	B2	1.1E-01	B2	25
Barium	7440393	7.0E-02					8
Barium Cyanide	542621	1.0E-01					8
Baygon	114261	4.0E-03					25
Bayleton	43121433	3.0E-02					18
Benefin	1861401	3.0E-01					4
Benzaldehyde	100527	1.0E-01					8
Benzene	71432	5.0E-03	5.5E-02	A	2.9E-02	A	32
Benzidine	92875	3.0E-03	2.3E+02	A	2.3E+02	A	46
Benzoic acid	65850	4.0E+00		D		D	4
Benzotrichloride	98077		1.3E+01	B2		B2	44
Benzo(a)anthracene	56553			B2		B2	28
Benzo(b)fluoranthene	205992			B2		B2	28
Benzo[a]pyrene	50328		7.3E+00	B2	6.1E+00	B2	44
Benzo[k]fluoranthene	207089			B2		B2	28
Benzyl Alcohol	100516	3.0E-01					4
Benzyl Chloride	100447		1.7E-01	B2		B2	25
Beryllium	7440417	2.0E-03	4.3E+00	B1	8.4E+00	B1	38
Biphenanthrin	82657043	1.5E-02					18
Biphenyl, 1,1-	92524	5.0E-02		D		D	8
Bisphenol A	80057	5.0E-02					8
Bis(2chloro-1methylethyl)ether	108601		7.0E-02	C	3.5E-02	C	25
Bis(2-chloroethyl)ether	111444		1.1E+00	B2	1.1E+00	B2	34
Bis(2-ethylhexyl)phthalate	117817	2.0E-02	1.4E-02	B2		B2	22
Bis(chloromethyl)ether	542881		2.2E+02	A	2.2E+02	A	44
Boron	7440428	9.0E-02					8
Bromodichloromethane	75274	2.0E-02	6.2E-02	B2		B2	25
Bromoform	75252	2.0E-02	7.9E-03	B2	3.9E-03	B2	22
Bromomethane	74839	1.4E-03		D		D	25
Bromophos		5.0E-03					25
Bromoxynil	1689845	2.0E-02					18
Bromoxynil Octanoate	1689992	2.0E-02					18
Butadiene, 1,3-	106990				1.8E+00	B2	34
Butanol, n-	71363	1.0E-01		D		D	8

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40.1513(2) Human Health-Based Toxicity Values and Scores							
Chemical Name	CAS Number	Chronic Oral RfD mg/kg/day	Oral Carcin Slope Factor 1/(mg/kg/day)	CLS	Inhalation Carcin Slope Factor 1/(mg/kg/day)	CLS	Human Health Toxicity Value
Butyl Benzyl Phthalate	85687	2.0E-01		C		C	20
Butylate	2008415	5.0E-02					8
Butylphthalyl Butylglycolate	85701	1.0E+00					4
Cacodylic Acid	75605	3.0E-03		D		D	25
Cadmium	7440439	5.0E-04			6.1E+00	B1	50
Calcium Chromate	13765190						25
Calcium Cyanide	592018	4.0E-02					18
Caprolactam	105602	5.0E-01					4
Captafol	2425061	2.0E-03	8.6E-03	C		C	30
Captan	133062	1.3E-01	3.5E-03	B2		B2	20
Carbaryl	63252	1.0E-01					8
Carbazole	86748		2.0E-02	B2		B2	22
Carbofuran	1563662	5.0E-03					25
Carbon Disulfide	75150	1.0E-01					8
Carbon Tetrachloride	56235	7.0E-04	1.3E-01	B2	5.3E-02	B2	43
Carboxin	5234684	1.0E-01					8
Chloral hydrate	75876	1.0E-01					8
Chloramben	133904	1.5E-02					18
Chloranil	118752		4.0E-01	C		C	28
Chlordane	57749	6.0E-05	3.5E-01	B2	1.3E+00	B2	45
Chlorine	7782505	1.0E-01					8
Chlorine Dioxide	10049044	3.0E-02		D		D	18
Chloroacetic Acid	79118	2.0E-03					25
Chloroacetophenone, 2-	532274						25
Chloroaniline, 4-	106478	4.0E-03					25
Chlorobenzene	108907	2.0E-02		D		D	18
Chlorobenzilate	510156	2.0E-02	2.7E-01	B2	2.7E-01	B2	28
Chlorobenzoic Acid, para-	74113	2.0E-01					4
Chlorobenzotrifluoride, 4-	98566	2.0E-02					18
Chlorobutane, 1-	109693	4.0E-01		D		D	4
Chlorobutane, 2-	78864			D		D	25
Chloroethane	75003						25
Chloroform	67663	1.0E-02	NA-note #19	B2	8.1E-02	B2	44
Chloromethane	74873			D		D	25
Chloromethyl Methyl Ether	107302			A		A	34
Chloronaphthalene, beta	91587	8.0E-02					8
Chloronitrobenzene, o-	88733		2.5E-02	B2		B2	22
Chloronitrobenzene, p-	100005		1.8E-02	B2		B2	22
Chlorophenol, 2-	95578	5.0E-03					25
Chloroprene	126998	2.0E-02					18
Chloropropane, 2-	75296						25
Chlorothalonil	1897456	1.5E-02	1.1E-02	B2		B2	22
Chloro-2-2-methyl-aniline Hy, 4-	3165933		4.6E-01	B2		B2	28
Chloro-2-methyl-aniline, 4-	95692		5.8E-01	B2		B2	28

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Chemical Name	CAS Number	Chronic Oral RfD mg/kg/day	Oral Carcin Slope Factor 1/(mg/kg/day)	CLS	Inhalation Carcin Slope Factor 1/(mg/kg/day)	CLS	Human Health Toxicity Value
Chlorpropham	101213	2.0E-01					4
Chlorpyrifos	2921882	3.0E-03					25
Chlorpyrifos-methyl	5598130	1.0E-02					18
Chlorsulfuron	64902723	5.0E-02					8
Chlorthiophos	21923239	8.0E-04					40
Chromic Acid	7738945						25
Chromium III	16065831	1.5E+00					4
Chromium VI	18540299	3.0E-03			4.1E+01	A	46
Chrysene	218019			B2		B2	28
Coal Tars							25
Coke Oven Emissions	8007452				2.2E+00	A	34
Copper	7440508			D		D	25
Creosote	8001589			B1		B1	28
Cresol, meta-	108394	5.0E-02		C		C	22
Cresol, ortho-	95487	5.0E-02		C		C	22
Cresol, para-	106445	5.0E-03		C		C	32
Crotonaldehyde	123739		1.9E+00	C	1.9E+00	C	34
Cumene	98828	1.0E-01		D		D	8
Cyanazine	21725462	2.0E-03	8.4E-01	C			34
Cyanide	57125	2.0E-02		D		D	18
Cyanogen	460195	4.0E-02					18
Cyclohexane	110827						25
Cyclohexylamine	108918	2.0E-01					4
Cyclonite (RDX)	121824	3.0E-03	1.1E-01	C		C	32
Cyromazine	66215278	7.5E-03					25
D, 2,4-	94757	1.0E-02					18
Dacthal (DCPA)	1861321	1.0E-02					18
Dalapon (sodium salts)	75990	3.0E-02					18
DB, 2,4-	94826	8.0E-03					18
DBCP	96128	2.0E-02	1.4E+00	B2	2.4E-03	B2	34
DDD	72548		2.4E-01	B2		B2	28
DDE	72559		3.4E-01	B2		B2	28
DDT	50293	5.0E-04	3.4E-01	B2	3.4E-01	B2	45
Decabromodiphenyl Ether	1163195	1.0E-02		C		C	25
Demeton	8065483	4.0E-05					40
Diallate	2303164		6.1E-02	B2		B2	25
Diazinon	333415	9.0E-04					40
Dibenzofuran	132649			D		D	25
Dibromobenzene, 1,4-	106376	1.0E-02					18
Dibromochloromethane	124481	2.0E-02	8.4E-02	C		C	25
Dibromoethane, 1,2-	106934	2.0E-05	8.5E+01	B2	7.6E-01	B2	50
Dicamba	1918009	3.0E-02					18
Dichlorobenzene, 1,3-	541731			D		D	25

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Chemical Name	CAS Number	Chronic Oral RfD mg/kg/day	Oral Carcin Slope Factor 1/(mg/kg/day)	CLS	Inhalation Carcin Slope Factor 1/(mg/kg/day)	CLS	Human Health Toxicity Value
Dichlorobenzene, ortho-	95501	9.0E-02		D		D	8
Dichlorobenzene, para-	106467		2.4E-02	B2		B2	22
Dichlorobenzidene, 3,3-	91941		4.5E-01	B2		B2	28
Dichlorodifluoromethane	75718	2.0E-01					4
Dichloroethane, 1,1-	75343	1.0E-01		C		C	22
Dichloroethane, 1,2-	107062	2.0E-02	9.1E-02	B2	9.1E-02	B2	25
Dichloroethylene, 1,1-	75354	5.0E-02		C		C	22
Dichloroethylene, cis-1,2-	156592	1.0E-02		D		D	18
Dichloroethylene, trans-1,2-	156605	2.0E-02					18
Dichloroethylene (mixed)	540590	9.0E-03					18
Dichlorophenol, 2,4-	120832	3.0E-03					25
Dichloropropane, 1,2-	78875		6.8E-02	B2		B2	25
Dichloropropanol, 2,3-	616239	3.0E-03					25
Dichloropropene, 1,3-	542756	3.0E-02	1.0E-01	B2	1.3E-01	B2	25
Dichloro-2-butene, 1,4-	764410			B2	9.3E+00	B2	44
Dichlorvos	62737	5.0E-04	2.9E-01	B2		B2	45
Dicofol	115322		4.4E-01	C			28
Dicyclopentadiene	77736	3.0E-02					18
Dieldrin	60571	5.0E-05	1.6E+01	B2	1.6E+01	B2	50
Diethyl Phthalate	84662	8.0E-01		D		D	4
Diethylene Glycol Monobutyl Et	112345						25
Diethylene Glycol Monoethyl Et	111900	2.0E+00					4
Diethylformamide	617845	1.1E-02					18
Diethyl-p-nitrophenylphosphate	311455			D		D	25
Diflubenzuron	35367385	2.0E-02					18
Dimethoate	60515	2.0E-04					40
Dimethoxybenzidine, 3,3-	119904		1.4E-02	B2		B2	22
Dimethyl Sulfate	77781			B2		B2	28
Dimethyl Terephthalate	120616	1.0E-01					8
Dimethylamine	124403						25
Dimethylaniline, 2,4-	95681	2.0E-03	7.5E-01	C		C	34
Dimethylaniline Hydrochlor, 2,4-	21436964		5.8E-01	C		C	28
Dimethylbenzidine, 3,3-	119937		9.2E+00	B2		B2	44
Dimethylformamide, N,N-	68122	1.0E-01					8
Dimethylhydrazine, 1,1-	57147		2.6E+00	B2	3.5E+00	B2	34
Dimethylhydrazine, 1,2-	540738		3.7E+01	B2	3.7E+01	B2	44
Dimethylphenol, 2,4-	105679	2.0E-02					18
Dimethylphenol, 2,6-	576261	6.0E-04					40
Dimethylphenol, 3,4-	95658	1.0E-03					25
Dimethylphthalate	131113	1.0E+01		D		D	4
DIMP	1445756	8.0E-02		D		D	8
Dinitrobenzene, m-	99650	1.0E-04		D		D	40
Dinitrobenzene, o-	528290	4.0E-04		D		D	40

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40.1513(2) Human Health-Based Toxicity Values and Scores							
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Dinitrobenzene, p-	100254	4.0E-04					40
Dinitrophenol, 2,4-	51285	2.0E-03					25
Dinitrotoluene, 2,4-	121142	2.0E-03	6.8E-01	B2		B2	34
Dinitrotoluene, 2,6-	606202	1.0E-03	6.8E-01	B2		B2	34
Dinitrotoluene (mixture)			6.8E-01	B2		B2	28
Dinitro-o-cresol, 4,6-	534521						25
Dinoseb	88857	1.0E-03		D		D	25
Dioxane, 1,4-	123911		1.1E-02	B2		B2	22
Diphenamid	957517	3.0E-02					18
Diphenyl	92524						25
Diphenylamine, N,N-	122394	2.5E-02					18
Diphenylhydrazine, 1,2-	122667		8.0E-01	B2	8.0E-01	B2	28
Diquat	85007	2.2E-03					25
Direct Black 38	1937377		8.6E+00	A		A	44
Direct Blue 6	2602462		8.1E+00	A		A	44
Direct Brown 95	16071866		9.3E+00	A		A	44
Direct Sky Blue 6B	2610051			B2		B2	28
Disulfoton	298044	4.0E-05					40
Dithiane, 1,4-	505293	1.0E-02		D		D	18
Di(2-ethylhexyl)adipate	103231	6.0E-01	1.2E-03	C		C	18
Di-n-butyl Phthalate	84742	1.0E-01		D		D	8
Dodine	2439103	4.0E-03					25
Endosulfan	115297	6.0E-03					25
Endothall	145733	2.0E-02					18
Endrin	72208	3.0E-04		D		D	40
Epichlorohydrin	106898	2.0E-03	9.9E-03	B2	4.2E-03	B2	30
Epoxybutane, 1,2-	106887						25
Ethanol	64175						25
Ethion	563122	5.0E-04					40
Ethoxyethanol, 2-	110805	4.0E-01					4
Ethoxyethanol Acetate, 2-	111159	3.0E-01					4
Ethyl Acetate	141786	9.0E-01					4
Ethyl Acrylate	140885		4.8E-02	B2		B2	25
Ethyl Chloride	75003						25
Ethyl Dipropylthiocarbamate,S-	759944	2.5E-02					18
Ethyl Ether	60297	2.0E-01					4
Ethyl Methacrylate	97632	9.0E-02					8
Ethyl p-Nitrophenyl Phenylphos	2104645	1.0E-05					40
Ethylbenzene	100414	1.0E-01		D		D	8
Ethylene Cyanohydrin		3.0E-01					4
Ethylene Dibromide	106934	2.0E-05	8.5E+01	B2	7.6E-01	B2	50
Ethylene Glycol	107211	2.0E+00					4
Ethylene Glycol Monobutyl Ethe	111762	5.0E-01					4

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Ethylene Oxide	75218		1.0E+00	B1	3.5E-01	B1	34
Ethylene Thiourea	96457	8.0E-05	1.1E-01	B2		B2	43
Ethylenediamine	107153	2.0E-02		D		D	18
Express	101200480	8.0E-03					18
Fenamiphos	22224926	2.5E-04					40
Fluoranthene	206440	4.0E-02		D		D	18
Fluorene	86737	4.0E-02		D		D	18
Fluoride	7782414	6.0E-02					8
Fluridone	59756604	8.0E-02					8
Folpet	133073	1.0E-01	3.5E-03	B2		B2	20
Fonofos	944229	2.0E-03					25
Formaldehyde	50000	2.0E-01	3.0E-02	B1	4.5E-02	B1	20
Furan	110009	1.0E-03					25
Furazolidone	67458		3.8E+00	B2		B2	34
Furfural	98011	3.0E-03					25
Furium	531828		5.0E+01	B2		B2	44
Glycidaldehyde	765344	4.0E-04		B2		B2	45
Heptachlor	76448	5.0E-04	4.5E+00	B2	4.5E+00	B2	46
Heptachlor Epoxide	1024573	1.3E-05	9.1E+00	B2	9.1E+00	B2	50
Heptane, n-	142825			D		D	25
Hexabromobenzene	87821	2.0E-03					25
Hexachlorobenzene	118741	8.0E-04	1.6E+00	B2	1.6E+00	B2	46
Hexachlorobutadiene	87683	2.0E-04	7.8E-02	C	7.8E-02	C	43
Hexachlorocyclohexane, alpha-	319846		6.3E+00	B2	6.3E+00	B2	44
Hexachlorocyclohexane, beta-	319857		1.8E+00	C	1.8E+00	C	34
Hexachlorocyclohexane, delta-	319868			D		D	25
Hexachlorocyclohexane, epsilon	6108107			D		D	25
Hexachlorocyclohexane, gamma-	58899	3.0E-04	1.3E+00	B2-C		B2-C	46
Hexachlorocyclopentadiene	77474	6.0E-03		D		E	25
Hexachloroethane	67721	1.0E-03	1.4E-02	C	1.4E-02	C	30
Hexachlorophene	70304	3.0E-04					40
Hexane, n-	110543	6.0E-02					8
Hexanone, 2-	591786						25
Hexazinone	51235042	3.3E-02					18
Hydrazine	302012		3.0E+00	B2	1.7E+01	B2	34
Hydrogen Chloride	7647010						25
Hydrogen Cyanide	74908	2.0E-02					18
Hydrogen Fluoride	7664393						25
Hydrogen Sulfide	7783064	3.0E-03					25
Hydroquinone	123319	4.0E-02					18
Isoamyl Acetate	123922						25
Isobutyl Acetate	110190						25
Isobutyl Alcohol	78831	3.0E-01					4
Isophorone	78591	2.0E-01	9.5E-04	C		C	18
Isopropalin	33820530	1.5E-02					18
Isopropyl Acetate	108214						25

Workbook: HumHlthtab.xls

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Isopropyl methyl phosphonic ac	1832548	1.0E-01		D		D	8
Isoxaben	82558507	5.0E-02		C		C	22
Lead	7439921	7.5E-04		B2		B2	45
Lead Alkyls		1.0E-07					40
Lead Subacetate	1335326						25
Linuron	330552	2.0E-03		C		C	32
Londax	83055996	2.0E-01					4
Malathion	121755	2.0E-02					18
Maleic Anhydride	108316	1.0E-01					8
Maleic Hydrazide	123331	5.0E-01					4
Malononitrile	109773	2.0E-05					40
Mancozeb	8018017	3.0E-02					18
Maneb	12427382	5.0E-03					25
Manganese	7439965			D		D	25
MCPA	94746	5.0E-04					40
MCPB	94815	1.0E-02					18
MCPP	93652	1.0E-03					25
Mephosfolan	950107	9.0E-05					40
Mepiquat Chloride	24307264	3.0E-02					18
Mercury, alkyl							25
Mercury (Elemental)	7439976	3.0E-04		D		D	40
Merphos	150505	3.0E-05					40
Merphos Oxide	78488	3.0E-05					40
Methacrylonitrile	126987	1.0E-04					40
Methanol	67561	5.0E-01					4
Methomyl	16752775	2.5E-02					18
Methoxychlor	72435	5.0E-03		D		D	25
Methoxyethanol, 2-	109864	1.0E-03					25
Methoxyethanol Acetate, 2-	110496	2.0E-03					25
Methoxy-5-nitroaniline, 2-	99592		4.6E-02	B2		B2	25
Methyl Acetate	79209	1.0E+00					4
Methyl Acrylate	96333	3.0E-02		D		D	18
Methyl Bromide	74839	1.4E-03		D		D	25
Methyl Chloride	74873		1.3E-02	C	6.3E-03	C	22
Methylene Chloride	75092	6.0E-02	7.5E-03	B2		B2	20
Methyl Ethyl Ketone	78933	6.0E-01		D		D	4
Methyl Isobutyl Ketone	108101	8.0E-02					8
Methyl Isocyanate	624839						25
Methyl Mercury	22967926	1.0E-04		C		C	43
Methyl Methacrylate	80626	1.4E+00					4
Methyl Parathion	298000	2.5E-04					40
Methyl Styrene	25013154	6.0E-03					25

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Methyl Styrene, alpha	98839	7.0E-02					8
Methylaniline, 2-	95534		2.4E-01	B2		B2	28
Methylaniline Hydrochloride, 2-	636215		1.8E-01	B2		B2	25
Methylene Bromide	74953	1.0E-02					18
Methylenebisbenzenamine, 4,4-	101779		2.5E-01	NA			28
Methylenebis(N,N'...)anil, 4,4-	101611		4.6E-02	B2		B2	25
Methylhydrazine	60344		1.1E+00	NA			34
Methyl-5-nitroaniline, 2-	99558		3.3E-02	C		C	25
Methyl-tert-Butyl Ether	1634044	1.0E-01					8
Metolachlor	51218452	1.5E-01		C		C	22
Mirex	2385855	2.0E-04	1.8E+00	B2		B2	46
Molinate	2212671	2.0E-03					25
Molybdenum	7439987	5.0E-03					25
Monochloramine	10599903	1.0E-01		D		D	8
Naphthalene	91203	2.0E-02		C		C	25
Napropamide	15299997	1.0E-01					8
Niagara Blue 4B	2429745			B2		B2	28
Nickel	7440020	2.0E-02			8.4E-01	A	28
Nickel Carbonyl	13463393			B2		B2	28
Nickel Oxide	1313991						25
Nickel Subsulfide	12035722				1.7E+00	A	34
Nickel (dust)	00020				8.4E-01	A	28
Nitrapyrin	1929824	1.5E-03					25
Nitrate	14797558	1.6E+00					4
Nitrite	14797650	1.0E-01					8
Nitrobenzene	98953	5.0E-04		D		D	40
Nitrofurantoin	67209	7.0E-02					8
Nitrofurazone	59870		1.5E+00	B2		B2	34
Nitroguanidine	556887	1.0E-01		D		D	8
Nitropropane, 2-	79469		9.5E+00	B2	9.4E+00	B2	44
Nitrotoluene, m-	99081	1.0E-02					18
Nitrotoluene, o-	88722	1.0E-02					18
Nitrotoluene, p-	99990	1.0E-02					18
Norflurazon	27314132	4.0E-02					18
N-Nitrosodiethanolamine	1116547		2.8E+00	B2		B2	34
N-Nitrosodiethylamine	55185		1.5E+02	B2	1.5E+02	B2	44
N-Nitrosodimethylamine	62759	8.0E-06	5.1E+01	B2	5.1E+01	B2	50
N-Nitrosodiphenylamine	86306		4.9E-03	B2		B2	22
N-Nitrosodi-n-butylamine	924163		5.4E+00	B2	5.4E+00	B2	34
N-Nitrosodi-n-propylamine	621647		7.0E+00	B2		B2	44
N-Nitrosomethylethylamine	10595956		2.2E+01	B2		B2	44
N-Nitrosomethylvinylamine	4549400			B2		B2	28
Octabromodiphenyl Ether	32536520	3.0E-03		D		D	25

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Octamethylpyrophosphoramide	152169	2.0E-03					25
Oxamyl	23135220	2.5E-02					18
Parathion	56382	6.0E-03		C		C	32
PBBs		7.0E-06	8.9E+00	B2		B2	50
PCBs	1336363	2.0E-05		B2		B2	45
Pebulate	1114712	5.0E-02					8
Pendimethalin	40487421	4.0E-02					18
Pentabromodiphenyl Ether	32534819	2.0E-03		D		D	25
Pentabromo...cy.hexa, 1,2,3,4,5-	87843		2.3E-02	C		C	22
Pentachlorobenzene	608935	8.0E-04		D		D	40
Pentachloronitrobenzene	82688	3.0E-03	2.6E-01	C		C	34
Pentachlorophenol	87865	3.0E-02	1.2E-01	B2		B2	25
Perchlorate		3.0E-05					40
Permethrin	52645531	5.0E-02					8
Phenanthrene	85018			D		D	25
Phenol	108952	6.0E-01		D		D	4
Phenylenediamine, m-	108452	6.0E-03					25
Phenylenediamine, o-	95545		4.7E-02	B2		B2	25
Phenylphenol, 2-	90437		1.9E-03	C		C	22
Phosgene	75445						25
Phosmet	732116	2.0E-02					18
Phosphine	7803512	3.0E-04		D		D	40
Phosphoric Acid	7664382						25
Phosphorus, white	7723140	2.0E-05		D		D	40
Phthalic Acid, p-	100210	1.0E+00					4
Phthalic Anhydride	85449	2.0E+00					4
Picloram	1918021	7.0E-02					8
Polyaromatic Hydrocarbons (PAHs)							25
Profluralin	26399360	6.0E-03					25
Prometon	1610180	1.5E-02					18
Prometryn	7287196	4.0E-03					25
Pronamide	23950585	7.5E-02					8
Propachlor	1918167	1.3E-02					18
Propazine	139402	2.0E-02					18
Propyl Alcohol	71238						25
Propylene Glycol	57556	2.0E+01					4
Propylene Glycol Monoethyl Eth	1569024	7.0E-01					4
Propylene Glycol Monomethyl Et	107982	7.0E-01					4
Propylene Oxide	75569		2.4E-01	B2	1.3E-02	B2	28
Pyrene	129000	3.0E-02		D		D	18
Pyridine	110861	1.0E-03					25
Quinoline	91225		3.0E+00	C		C	34
Quinone	106514						25
Resorcinol	108463						25

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Ronnel	299843	5.0E-02					8
Rotenone	83794	4.0E-03					25
Selenious Acid	7783008	5.0E-03		D		D	25
Selenium	7782492	5.0E-03		D		D	25
Selenium Sulfide	7446346			B2		B2	28
Silver	7440224	5.0E-03		D		D	25
Simazine	122349	5.0E-03	1.2E-01	C		C	32
Sodium Cyanide	143339	4.0E-02					18
Sodium Diethyldithiocarbamate	148185	3.0E-02	2.7E-01	C		C	28
Sodium Metavanadate	13718268	1.0E-03					25
Strontium	7440246	6.0E-01					4
Styrene	100425	2.0E-01	3.0E-02	B2	2.0E-03	B2	20
Sulfuric Acid	7664939						25
TCDD, 2,3,7,8-	1746016		1.5E+05	B2	1.5E+05	B2	44
TCMTB	21564170	3.0E-02					18
Tebuthiuron	34014181	7.0E-02					8
Temephos	3383968	2.0E-02					18
Terbacil	5902512	1.3E-02					18
Terbufos	13071799	2.5E-05					40
Terbutryn	886500	1.0E-03					25
Tetrachlorodifluoroethane	76120						25
Tetrachloroethane, 1,1,1,2-	630206	3.0E-02	2.6E-02	C	2.6E-02	C	22
Tetrachloroethane, 1,1,2,2-	79345		2.0E-01	C	2.0E-01	C	28
Tetrachloroethylene	127184	1.0E-02	5.1E-02	B2		B2	25
Tetrachlorophenol, 2,3,4,6-	58902	3.0E-02					18
Tetrachlorotoluene, p,a,a,a-	5216251		2.0E+01	B2		B2	44
Tetrachlorovinphos	961115	3.0E-02	2.4E-02	C		C	22
Tetraethyl Lead	78002	1.0E-07					40
Tetrahydrofuran	109999	1.8E-01					4
Thallic Oxide	1314325	7.0E-05		D		D	40
Thallium	7440280	7.0E-05					40
Thallium Acetate	563688	9.0E-05		D		D	40
Thallium Carbonate	6533739	8.0E-05		D		D	40
Thallium Chloride	7791120	8.0E-05		D		D	40
Thallium Nitrate	10102451	9.0E-05		D		D	40
Thallium Selenite	12039520	9.0E-05		D		D	40
Thallium Sulfate	7446186	8.0E-05		D		D	40
Thiofanox	39196184	3.0E-04					40
Thiram	137268	5.0E-03					25
Tin	7440315	6.0E-01					4
Toluene	108883	2.0E-01		D		D	4
Toluene Diisocyanate	584849						25
Toluenediamine, 2,4-	95807		3.2E+00	B2		B2	34
Toluene-2,5-diamine	95705	6.0E-01					4

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Toluene-2,6-diamine	823405	2.0E-01					4
Toluidine, o-	95534		2.4E-01	B2		B2	28
Toluidine, p-	106490		1.9E-01	C		C	25
Toxaphene	8001352		1.1E+00	B2	1.1E+00	B2	34
TP, 2,4,5-	93721	8.0E-03		D		D	18
Triallate	2303175	1.3E-02					18
Tribromobenzene, 1,2,4-	615543	5.0E-03					25
Trichloroaniline, 2,4,6-	634935		3.4E-02	C		C	25
Trichloroaniline Hydroch, 2,4,6-	33663502		2.9E-02	C		C	22
Trichlorobenzene, 1,2,4-	120821	1.0E-02		D		D	18
Trichloroethane, 1,1,1-	71556	9.0E-02		D		D	8
Trichloroethane, 1,1,2-	79005	4.0E-03	5.7E-02	C	5.7E-02	C	32
Trichloroethylene	79016	2.0E-03	1.1E-02	B2	1.7E-02	B2	30
Trichlorofluoromethane	75694	3.0E-01					4
Trichlorophenol, 2,4,5-	95954	1.0E-01					8
Trichlorophenol, 2,4,6-	88062		1.1E-02	B2	1.0E-02	B2	22
Trichloropropane, 1,1,2-	598776	5.0E-03					25
Trichloropropane, 1,2,3-	96184	6.0E-03	7.0E+00	B2		B2	46
Trichloropropene, 1,2,3-	96195	5.0E-03					25
Trichlorotrifluoroethane	76131	3.0E+01					4
Triethylamine	121448						25
Trifluralin	1582098	7.5E-03	7.7E-03	C		C	30
Trimethyl Phosphate	512561		3.7E-02	B2		B2	25
Trinitrobenzene, 1,3,5-	99354	3.0E-02					18
Vanadium	7440622	7.0E-03					25
Vanadium Pentoxide	1314621	9.0E-03					18
Vanadium Sulfate	36907423	2.0E-02					18
Vernam	1929777	1.0E-03					25
Vinyl Acetate	108054	1.0E+00					4
Vinyl Bromide	593602			B2	1.1E-01	B2	25
Vinyl Chloride	75014	3.0E-03	1.4E+00	A	3.0E-01	A	38
Xylenes	1330207	2.0E+00		D		D	4
Zinc	7440666	3.0E-01		D		D	4
Zineb	12122677	5.0E-02					8

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Table III.A. OHM TOXICITY SCORE							
Chemical Name	Concentration (soil/sediment: ug/g: surface/groundwater: ug/l)						
	<=99	100-999	1,000-9,999	10,000-100,000	>100,000 NAPL<0.5"	NAPL 0.5"-12"	NAPL >12"
Aliphatics C5-C8	5	15	25	35	45	55	65
C9-C12	5	15	25	35	45	55	65
C9-C18	5	15	25	35	45	55	65
C19-C36	1	10	20	30	40	50	60
Arsenic	20	30	40	50	60	70	80
Aromatics C9-C10	5	15	25	35	45	55	65
C11-C22	5	15	25	35	45	55	65
Benzene	15	25	35	45	55	65	75
Bis(2-ethylhexyl)phthalate	10	20	30	40	50	60	70
Cadmium	20	30	40	50	60	70	80
Carbon Tetrachloride	20	30	40	50	60	70	80
Chlorobenzene	5	15	25	35	45	55	65
Chromium III	1	10	20	30	40	50	60
Chromium VI	20	30	40	50	60	70	80
Coal Tars	10	20	30	40	50	60	70
Cyanide	5	15	25	35	45	55	65
Dichloroethane, 1,1-	10	20	30	40	50	60	70
Dichloroethane, 1,2-	10	20	30	40	50	60	70
Dichloromethane	5	15	25	35	45	55	65
Ethylbenzene	5	15	25	35	45	55	65
Ethylene Dibromide	20	30	40	50	60	70	80
#2 Fuel Oil (Virgin Product)	5	15	25	35	45	55	65
#6 Fuel Oil (Virgin Product)	5	15	25	35	45	55	65
Gasoline (Virgin Product)	5	15	25	35	45	55	65
Lead	20	30	40	50	60	70	80
Mercury (Elemental)	20	30	40	50	60	70	80
Methylene Chloride	10	20	30	40	50	60	70
Methyl Ethyl Ketone	1	10	20	30	40	50	60
Methyl-tert-Butyl Ether	5	15	25	35	45	55	65
Nickel	10	20	30	40	50	60	70
Phenol	1	10	20	30	40	50	60
Polyaromatic Hydrocarbons (PAHs)	10	20	30	40	50	60	70
Polychlorinated Biphenyls (PCBs)	20	30	40	50	60	70	80
Tetrachloroethylene	10	20	30	40	50	60	70
Toluene	1	10	20	30	40	50	60
Trichloroethane, 1,1,1-	5	15	25	35	45	55	65
Trichloroethylene	15	25	35	45	55	65	75
Vinyl Chloride	15	25	35	45	55	65	75
Xylenes	1	10	20	30	40	50	60
Zinc	1	10	20	30	40	50	60

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Table V.B. Environmental Toxicity Score					
Chemical	CONCENTRATION				
	(soil/sediment: ug/g; surface/groundwater ug/l)				
	<1	1-99	100-999	1,000-9,999	>=10,000
Arsenic (Arsenic III)	1	5	10	15	20
Benzene	1	5	10	15	20
Bis(2-ethylhexyl)phthalate	1	5	10	15	20
Carbon tetrachloride	1	5	10	15	20
Chlorobenzene	5	10	15	20	25
Chromium III	5	10	15	20	25
Chromium VI	5	10	15	20	25
Cyanide	5	10	15	20	25
Dichloroethane, 1,1-	0	1	5	10	15
Dichloroethane, 1,2-	0	1	5	10	15
Dichloroethene, 1,1-	0	1	5	10	15
Ethylbenzene	1	5	10	15	20
Ethylene dibromide	0	1	5	10	15
#2 Fuel Oil (virgin product)	10	15	20	25	30
#6 Fuel Oil (virgin product)	10	15	20	25	30
Gasoline (virgin product)	1	5	10	15	20
Lead	10	15	20	25	30
Mercury, inorganic or total	10	15	20	25	30
Methylene Chloride	0	1	5	10	15
Methyl ethyl ketone	0	1	5	10	15
Methyl-t-butyl ether	0	1	5	10	15
Nickel	1	5	10	15	20
Pentachlorophenol	5	10	15	20	25
Petroleum Hydrocarbons					
Aliphatic Hydrocarbons					
C ₅ through C ₈ Aliphatic Hydrocarbons	1	5	10	15	20
C ₉ through C ₁₂ Aliphatic Hydrocarbons	0	1	5	10	15
C ₉ through C ₁₈ Aliphatic Hydrocarbons	0	1	5	10	15
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	0	1	5	10	15
Aromatic Hydrocarbons					
C ₉ through C ₁₀ Aromatic Hydrocarbons	1	5	10	15	20
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	5	10	15	20	25
Phenol	5	10	15	20	25
Polychlorinated Biphenyls (PCBs)	15	20	25	30	35
Tetrachloroethene	0	1	5	10	15
Toluene	1	5	10	15	20
Trichloroethane, 1,1,1-	0	1	5	10	15
Trichloroethene	1	5	10	15	20
Vinyl chloride	0	1	5	10	15
Xylenes	5	10	15	20	25
Zinc	5	10	15	20	25

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40.1516(1) Environmental Toxicity Values				
Chemical	CASRN	Concentration (ug/L)	Endpoint Type	Environmental Toxicity Value
Acenaphthene	00083-32-9	23	CCC(FW)	30
Acenaphthylene	00208-96-8	0.14	Median PAH phototox	40
Acetone	00067-64-1	3400	acute LC50/10	10
Aldrin	00309-00-2	0.07	CMC(SW)/10	40
Anthracene	00120-12-7	0.13	acute LC50/10	40
Antimony	07440-36-0	300	chronic LC50	20
Arsenic (Arsenic III)	07440-38-2	36	CCC(SW)	20
Barium	07440-39-3	41000	acute LC50/10	10
Benzene	00071-43-2	460	acute LC50/10	20
Benzo(a)anthracene	00056-55-3	1	acute LC50/10	40
Benzo(a)pyrene	00050-32-8	0.5	acute LC50/10	40
Benzo(b)fluoranthene	00205-99-2	0.42	acute EC50/10	40
Benzo(ghi)perylene	00191-24-2	0.02	acute LC50/10	50
Benzo(k)fluoranthene	00207-08-9	0.14	acute LC50/10	40
Beryllium	07440-41-7	7.3	chronic LOEC	30
Biphenyl, 1,1-	00092-52-4	320	chronic LOEC	20
Bis(2-chloroethyl)ether	00111-44-4	24000	acute LC50/10	10
Bis(2-chloroisopropyl)ether	39638-32-9	24000	acute LC50/10	10
Bis(2-ethylhexyl)phthalate	00117-81-7	160	chronic LOEC	20
Bromodichloromethane	00075-27-4	20000	acute LOEC/10	10
Bromoform	00075-25-2	2900	acute LC50/10	10
Bromomethane	00074-83-9	30	acute LC50/10	30
Cadmium	07440-43-9	0.091	CCC(FW)	40
Carbon tetrachloride	00056-23-5	200	acute LC50/10	20
Chlordane	00057-74-9	0.00043	CCC(SW)	50
Chloroaniline, 4- (p)	00106-47-8	10	acute EC50/10	30
Chlorobenzene	00108-90-7	38	chronic LOEC	30
Chloroform	00067-66-3	970	chronic LOEC	10
Chlorophenol, 2-	00095-57-8	260	acute LC50/10	20
Chromium (total)		11	CCC (FW) for Cr VI	30
Chromium III	16065-83-1	24	CCC(FW)	30
Chromium VI	18540-29-9	11	CCC(FW)	30
Chrysene	00218-01-9	0.07	acute LC50/10	40
Cyanide	00057-12-5	1	CCC(SW)	30
Dibenzo(a,h)anthracene	00053-70-3	0.04	acute LC50/10	40
Dibromochloromethane	00124-48-1	3400	acute LC50/10	10
Dichlorobenzene, 1,2- (o)	00095-50-1	78	acute IC50/10	20
Dichlorobenzene, 1,3- (m)	00541-73-1	1500	chronic LOEC	10
Dichlorobenzene, 1,4- (p)	00106-46-7	310	chronic LOEC	20
Dichlorobenzidine, 3,3'-	00091-94-1	73	acute LC50/10	20
DDD	00072-54-8	0.18	chronic LC50	40
DDE	00072-55-9	1.7	chronic LC50	40
DDT	00050-29-3	0.001	CCC(SW)	50
Dichloroethane, 1,1-	00075-34-3	990	chronic LOEC	10
Dichloroethane, 1,2-	00107-06-2	990	chronic LOEC	10
Dichloroethene, 1,1-	00075-35-4	1200	acute LC50/10	10
Dichloroethene, cis-1,2-	00156-59-2	14000	acute LC50/10	10
Dichloroethene, trans-1,2-	00156-60-5	22000	acute LC50/10	10
Dichlorophenol, 2,4-	00120-83-2	80	chronic LC50	20
Dichloropropane, 1,2-	00078-87-5	25000	chronic LOEC	10
Dichloropropene, 1,3-	00542-75-6	9	acute EC50/10	30

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40.1516(1) Environmental Toxicity Values				
Chemical	CASRN	Concentration (ug/L)	Endpoint Type	Environmental Toxicity Value
Dieldrin	00060-57-1	0.0019	CCC(SW)	50
Diethyl phthalate	00084-66-2	340	acute EC50/10	20
Dimethyl phthalate	00131-11-3	23000	chronic LOEC	10
Dimethyl phenol, 2,4-	00105-67-9	3100	chronic LOEC	10
Dinitrophenol, 2,4-	00051-28-5	900	chronic LOEC	10
Dinitrotoluene, 2,4-	00121-14-2	3800	acute EC50/10	10
Dioxane, 1,4-	00123-91-1	990000	acute LC50/10	10
Endosulfan	00115-29-7	0.0087	CCC(SW)	40
Endrin	00072-20-8	0.0023	CCC(SW)	50
Ethylbenzene	00100-41-4	181	acute EC50/10	20
Ethylene dibromide	00106-93-4	9600	chronic LOEC	10
Fluoranthene	00206-44-0	0.9	acute	40
Fluorene	00086-73-7	0.14	Median PAH phototox	40
Heptachlor	00076-44-8	0.0036	CCC(SW)	50
Heptachlor epoxide	01024-57-3	0.0036	CCC(SW)	50
Hexachlorobenzene	00118-74-1	23	chronic LOEC	30
Hexachlorobutadiene	00087-68-3	13	chronic LOEC	30
Hexachlorocyclohexane	00058-89-9	0.016	CMC(SW)/10	40
Hexachloroethane	00067-72-1	210	chronic LOEC	20
HMX	02691-41-0	3900	chronic NOEC	10
Indeno(1,2,3-cd)pyrene	00193-335	0.14	Median PAH phototox	40
Lead	07439-92-1	0.5	CCC(FW)	40
Mercury, inorganic or total	07349-97-6	0.77	CCC(FW)	40
Methoxychlor	00072-43-5	0.05	chronic LOEC	40
Methylene Chloride	00075-09-2	6700	chronic LOEC	10
Methyl ethyl ketone	00078-93-3	200000	acute LC50/10	10
Methyl isobutyl ketone	00108-10-1	156000	chronic NOEC	10
Methyl mercury	22967-92-6	0.77	CCC(FW)	40
Methyl-t-butyl ether	01634-04-4	100000	chronic LOEC	10
Methylnaphthalene, 2-	00090-12-0	70	acute LC50/10	20
Naphthalene	00091-20-3	72	chronic LOEC	20
Nickel	00091-20-3	8.2	CCC(SW)	20
N-Nitrosodimethylamine	62-75-9	10000	chronic LOEC	10
Pentachlorophenol	07440-02-0	7.9	CCC(SW)	30
Perchlorate	NA	59	chronic LOEC	20
Petroleum Hydrocarbons				
Aliphatic Hydrocarbons				
C ₅ through C ₈ Aliphatic Hydrocarbons	NA	250	acute LC50/10	20
C ₉ through C ₁₂ Aliphatic Hydrocarbons	NA	1800	acute LC50/10	10
C ₉ through C ₁₈ Aliphatic Hydrocarbons	NA	1800	acute LC50/10	10
C ₁₉ through C ₃₆ Aliphatic Hydrocarbons	NA	2100	acute EC50/10	10
Aromatic Hydrocarbons				
C ₉ through C ₁₀ Aromatic Hydrocarbons	NA	540	acute LC50/10	20
C ₁₁ through C ₂₂ Aromatic Hydrocarbons	NA	5	Average PAH phototox	30
Phenanthrene	00085-01-8	38	chronic LOEC	30
Phenol	00108-95-2	62	chronic LOEC	30
Polychlorinated Biphenyls (PCBs)	01336-36-3	0.014	CCC (FW)	50
Pyrene	00129-00-0	0.089	acute LC50/10	40
RDX	00121-82-4	2400	chronic LOEC	10
Selenium	07782-49-2	5	CCC	30
Silver	07440-22-4	0.03	CMC(FW)/10	40
Styrene	00100-42-5	250	acute LC50/10	20

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40.1516(1) Environmental Toxicity Values				
Chemical	CASRN	Concentration (ug/L)	Endpoint Type	Environmental Toxicity Value
TCDD,2,3,7,8-	01746-01-6	0.000038	chronicLOEC	50
Tetrachloroethane, 1,1,1,2-	00630-20-6	2000	acute LC50/10	10
Tetrachloroethane, 1,1,2,2-	00079-34-5	4000	chronic LOEC	10
Tetrachloroethene	00127-18-4	1100	chronic LOEC	10
Thallium	07440-28-0	110	chronic	20
Toluene	00108-88-3	140	acute EC50/10	20
Trichlorobenzene, 1,2,4-	00120-82-1	340	chronic LOEC	20
Trichloroethane, 1,1,1-	00071-55-6	900	acute EC10/10	10
Trichloroethane, 1,1,2-	00079-00-5	15000	chronic LOEC	10
Trichloroethene	00079-01-6	190	acute LC50/10	20
Trichlorophenol, 2,4,5-	00095-95-4	130	chronic	20
Trichlorophenol, 2,4,6-	00088-06-2	18	acute LC50/10	30
Vanadium	07440-62-2	160	chronic	20
Vinyl chloride	00075-01-4	41000	acute EC50/10	10
Xylenes	01330-20-7	20	acute EC50/10	30
Zinc	07440-66-6	36	CCC(FW)	30

Notes:

CASRN = Chemical Abstracts Service Registry Number

CCC(FW) = Criterion Continuous Concentration in Freshwater (Chronic Ambient Water Quality Criterion)

CCC(SW) = Criterion Continuous Concentration in Saltwater (Chronic Ambient Water Quality Criterion)

CMC(SW)/10 = Criterion Maximum Chronic Concentration in Saltwater (Acute Ambient Water Quality Criterion)

CMC(FW)/10 = Criterion Maximum Chronic Concentration in Freshwater (Acute Ambient Water Quality Criterion)

Chronic NOEC = No Observed Effects Level for Chronic Exposure

Chronic LOEC = Lowest Observed Effects Level for Chronic Exposure

Acute LOEC/10 = Lowest Observed Effects Level for Acute Exposure divided by 10 to estimate a Chronic LOEC

Chronic LC50 = Lethal Concentration for 50 percent of a population following a chronic exposure

Acute LC50/10 = Lethal Concentration for 50 percent of the population following an acute exposure, divided by 10 to estimate a .
Chronic LC50

Chronic EC50 = Concentration at which 50% of a population would experience effects following a chronic

Acute EC50/10 = Concentration at which 50% of a population would experience effects following an acute exposure, divided by 10
to estimate a chronic EC50